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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/524-3300 7008 1830 0001 4712 4943

DEC 2 2 2010

Mr. Robert Kent
Vice President and Plant Manager
The Lemont Refinery, CITGO Petroleum Corporation
135th Street and New Avenue
Lemont, Illinois 60439-3659

Re: 1978030004 -- Will County
CITGO, Lemont Refinery
ILD041550567
RCRA Permit Log No: B-162R
RCRA Permits Admin Record File
Permit Draft

Dear Mr. Kent:

Attached is a DRAFT of the renewed RCRA Hazardous Waste Management Post Closure permit and associated Fact Sheet for the above referenced facility in Lemont, Illinois. The draft permit is based on the administrative record contained in the Agency's files. The contents of the administrative record are described in 35 Ill. Adm. Code 705.144.

Under the provisions of 35 Ill. Adm. Code 705.141(d), the draft permit and administrative record must be publicly noticed and made available for public comment. A public notice regarding the availability of this draft permit for public comment will be placed in the Homer Sun newspaper. The public comment period for this draft permit begins on December 31, 2010 and ends on February 14, 2011. Copies of the draft decision, fact sheet, and application are available for review at the Lemont Public Library, 50 E. Wend Street in Lemont.

During the comment period, the applicant or any interested party may submit comments to the Illinois EPA on the draft permit. At the close of the comment period, the Illinois EPA will prepare a response to significant comments. Comments on the draft renewal permit may be submitted to:

Mara McGinnis, Office of Community Relations, # 5
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

Illinois EPA will issue a final permit after the close of the public comment period unless the Illinois EPA decides to revise the tentative decision. The appeal process and limitations are addressed in 35 Ill. Adm. Code 705.212.

Within 35 days after the notification of a final permit decision, the Permittee may petition the Illinois Pollution Control Board to contest the issuance of the permit. The petition shall include a statement of the reasons supporting a review, including demonstration that any issues raised in the petition, were previously raised during the public comment period. In all other respects the petition shall be in accordance with the requirements for permit appeals as set forth in 35 Ill. Adm. Code Part 105. Nothing in this paragraph is intended to restrict appeal rights under Section 40(b) of the Environmental Protection Act (35 Ill. Adm. Code 705.212(a)).

If you have any questions concerning this draft permit, please contact Rob Watson, P.E. at 217/524-3265. Questions regarding the groundwater aspects of this draft permit should be directed to Paula Stine at 217-524-3861. Questions regarding the corrective action aspects of this draft permit should be directed to Takako Halteman at 217-524-3274.

Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:WRW:mls/100141s.doc WRW JKH BM PS

Attachment 1: Fact Sheet
Attachment 2: Draft RCRA Permit

cc: Willie Harris, USEPA Region V
Mark Robbins, TRC

FACT SHEET
DRAFT Renewal RCRA Hazardous Waste Permit

CITGO Lemont Refinery

USEPA ID No: ILD041550567
STATE ID No: 1978030004
Log No: B-162R

I. INTRODUCTION

The Illinois EPA has prepared a draft renewed Resource Conservation Recovery Act (RCRA) permit for public comment for the CITGO Lemont Refinery located at 135th Street and New Avenue in Lemont, Illinois. This fact sheet has been prepared pursuant to the requirements of 35 Illinois Administrative Code (35 Ill. Adm. Code) 705.143 and it provides a brief summary of the principal facts and significant factual, legal, methodological, and policy questions considered in preparing this draft RCRA Permit.

The permit, if issued, would require CITGO to carry out the following activities at the Refinery: 1) close the four areas in the hazardous waste land treatment facility, 2) provide a minimum of 30 years of post-closure care for the closed land treatment facility, 3) conduct a groundwater detection monitoring program, and 4) continue to conduct a corrective action program on the solid waste management units (SWMUs) including site-wide groundwater monitoring at the CITGO Lemont Refinery. The permit contains all of the standard conditions required by 35 Ill. Adm. Code Parts 702, 703, and 724; and the applicable conditions for treatment, storage, or disposal facilities to ensure the requirements of 35 Ill. Adm. Code Part 724 are met.

The CITGO Lemont Refinery is an existing facility that began operating under the RCRA Interim Status Standards in November, 1980. The facility was issued a RCRA Permit (Log No B-162) on September 18, 1997 for post-closure care of the land treatment facility at the CITGO Refinery. The original permit expired on October 23, 2007. An application to renew this permit was initially submitted by CITGO on April 23, 2007. In accordance with 35 Ill. Adm. Code 702.125, the requirements of the original permit remain in place beyond the expiration date due to the timely submittal of an application to renew the permit. The draft renewed permit contains requirements similar to those set forth in the original permit, updated as appropriate to reflect the current status of the facility and the applicable regulations.

II. DESCRIPTION OF FACILITY

A. General Site History

The CITGO Lemont Refinery is a petroleum refinery that covers approximately 900 acres. It has a rated capacity of about 160,000 barrels per day. The refinery was built in the 1920's. Globe Oil & Refining Co. purchased the refinery in 1928. Pure Oil Company purchased the facility in 1954. Union Oil Company merged with Pure Oil in 1965. The new Chicago Refinery was constructed between 1967 and 1970. Union Oil Corporation (UNION OIL) operated the refinery until 1989 at which time the UNO-VEN Company (UNO-VEN) was formed through a joint venture between UNION OIL and Petroleus de Venezuela, SA (PDVSA). In 1997 PDV Midwest Refining, LLC became the owner and CITGO Petroleum Corporation became the operator of the Refinery. The refinery's major products include: gasoline, diesel fuels, aviation turbine fuels, petroleum coke, petrochemical solvents, and liquefied petroleum gas.

B. Site Description

The CITGO Lemont Refinery is located near the city of Lemont, Illinois. It is bordered to the west and north by the Illinois & Michigan Canal, to the east by Smith Road, and south by 135th Street. Land uses to the north are industrial, to the east are agricultural and residential, those to the south are agricultural, recreational, and residential.

The total acreage of the hazardous waste land treatment facility (LTF) is 13.5 acres. Area I was opened in 1973 and the remaining three areas were opened in 1980. Wastes were either directly applied to the soil or were dewatered in adjacent decant basins. After dewatering, the solids were then placed on the land treatment areas. After waste was applied, it was incorporated into the soil.

API separator sludge (K051; a hazardous waste listed due to toxicity), was treated at the LTF until September 1981. After that time, only nonhazardous wastes were applied to the LTF. These nonhazardous wastes included clear well sludge, cooling tower sludge, heavy oil sludge, stormwater basin dredgings and water/wastewater treatment sludges. The majority of the wastes were stormwater basin dredgings and water/wastewater treatment sludges. The last time wastes were applied to the LTF for treatment was in November 1989. In 1995 the Permittee was allowed to place several piles of sludge generated during the closure of the storm water basin on Area I. These piles will be incorporated into the closure of the LTF.

Hazardous Waste Unit Name	Capacity	Hazardous Waste in Units
Area I	5.5 acres	API Separator Sludge (K051)
Area II	4.2 acres	API Separator Sludge (K051)
Area III	1.2 acres	API Separator Sludge (K051)
Area IV	2.6 acres	API Separator Sludge (K051)
Total Acres =	13.5 acres	

III. HAZARDOUS WASTE MANAGEMENT UNITS

A. CLOSURE

This Permit prohibits CITGO from placing any additional wastes on the four land treatment areas and requires CITGO to close the LTF. The piles of sludge from the stormwater basin on Area I may be spread out on Areas I and/or II as needed to fill in low areas. The LTF areas will be graded to appropriate contours, and a vegetative layer will be placed over all of the land treatment areas. Section III of the Permit contains conditions that are specific to the closure of the LTF and that implement the regulatory requirements of 35 IAC Part 724, Subpart G.

B. POST-CLOSURE

Following closure, CITGO will be required to provide at least 30 years of post-closure care for the LTF. The permit requires CITGO to monitor the soil and groundwater under the LTF, as well as inspect, maintain, and keep records of the areas and activities conducted at the permitted units in accordance with the provisions of the post-closure care plan located in the permit application. Section IV of the Permit contains conditions that are specific to the post-closure care of these units and that implement the regulatory requirements of 35 IAC Part 724, Subpart G.

To date, a statistically significant increase of hazardous constituents has not been detected in the soil under the LTF, and hazardous constituents have not been detected in the groundwater under the LTF.

C. GROUNDWATER DETECTION MONITORING PROGRAM

Permit Section V contains conditions requiring groundwater monitoring to detect any releases from the LTF that could potentially impact the uppermost aquifer. The facility has six (6) monitoring wells to monitor the uppermost aquifer at the LTF: one (1) hydraulically upgradient well; five (5) downgradient wells located at the hydraulically downgradient limit of the waste management area; and eighteen (18) piezometer wells for monitoring groundwater surface elevations only. Groundwater parameters monitored in the uppermost aquifer below the facility indicate, at the present time, no impacts have occurred and thus a Groundwater

Detection Monitoring Program meeting the requirements of 35 Ill. Adm. Code 724.198 shall be implemented.

IV. CORRECTIVE ACTION AT SOLID WASTE MANAGEMENT UNITS

This draft Permit requires CITGO to conduct corrective action, as necessary to protect human health and the environment, on any solid waste management units (SWMUs) at the facility found to be releasing hazardous wastes or hazardous constituents. Such activities must be carried out on any unit which was used to manage solid waste, regardless of when the management took place. These corrective action activities include development and execution of: (1) a RCRA Facility Investigation (RFI) to determine whether there has been a release from the SWMUs of concern at the facility and the extent of any detected contamination; and (2) a Corrective Measures Program to provide the corrective action necessary to protect human health and the environment from the releases discovered during the RFI.

Based upon the results of the RCRA Facility Assessment which was conducted by the Illinois EPA for this facility and recent activities at the facility, the Corrective Action Program must be carried out at 54 SWMUs identified in Section VI of this Draft Permit. The SWMUs have been grouped into two categories (Group 1 and Group 2) based on their estimated potential risk to human health and the environment. In addition, SWMUs identified through the Sewer Inspection and Maintenance Program for the entire facility are also included in the Corrective Action Program.

In addition to the above, the facility has been implementing groundwater investigation through two groundwater monitoring programs: (1) the Groundwater Management Zone (GMZ); and (2) the Site-Wide Groundwater Monitoring Program. Any of the SWMUs identified in the RFI as having groundwater as a media of concern, must also be evaluated as a part of the Site-Wide Groundwater Monitoring Program as appropriate.

A brief summary of each afore-mentioned aspect of the Corrective Action Program at the facility is described below:

1. Group 1 SWMUs, which consists of 26 SWMUs, have either had known releases in the past or pose the highest potential for releases that could impact the environment. To date, the facility has conducted Phase I and Phase II RFIs at all Group 1 SWMUs as necessary.

2. Group 2 SWMUs, which include 28 SWMUs identified to date, are not known to have had releases and have a low potential for environmental impact. All newly discovered SWMUs are also added to Group 2. To date, the facility has conducted, at minimum, the Phase I RFI at all Group 2 SWMUs.

3. The Site-Wide Sewer Inspection and Maintenance Program must be conducted in a phased approach for the Process Sewer System, the Storm Sewer System and the Open Flow Stormwater Ditches. This program began in 2004 and is on-going. Any defective equipment/system defect found to require further investigation must be identified as SWMUs and will be required to satisfy RFI requirements under the Corrective Action Program.

4. Groundwater Management Zone (SWMU 33) is included in Group 1. The GMZ Monitoring Program is currently being conducted as part of the Corrective Action Program. The GMZ was originally approved by the Illinois EPA on April 1, 1994 and was eventually incorporated in the RCRA Part B Permit as SWMU 33. The GMZ Monitoring Program is currently being implemented at the South Plant and includes: 14 monitoring wells; 15 bedrock piezometers; two staff gauges located in the I&M Canal; and the Green Coke Storage Area (GCSA) sump (which controls the groundwater by inward gradient control pumping).

5. The Site-Wide Groundwater Monitoring Program consists of a network of wells used to determine the quality of groundwater as it relates to multiple SWMUs within the Corrective Action Program. The Site-Wide Groundwater Monitoring Program currently includes 26 monitoring wells and 10 piezometers. Fifteen (15) Corrective Action Program wells may eventually be added to the Site-Wide Groundwater Monitoring Program. Remediation activities associated with the Site-Wide Groundwater Monitoring Program include groundwater recovery wells (GRW-1, GRW-2, and GQ-MW-2A), skimmer pumps, and the French Drain System.

V. CONSIDERED PERMIT ACTIONS OTHER THAN RCRA

A. Air

The air emissions from a this facility are regulated under the Clean Air Act (CAA), Illinois' Environmental Protection Act and State regulations at Title 35: Environmental Protection, Subtitle B: Air Pollution. Under these regulations, the facility is required to obtain a Permit to install or operate any process which is, or may be, a source of air pollutants. The facility has a number of permits regulating the air emissions from the refinery operations.

B. Water

A discharge of any waste waters from a hazardous waste management facility into the waters of the State is required to have a National Pollutant Discharge Elimination System (NPDES) Permit, issued by the Agency under Section 39(b) of the Environmental Protection Act. The facility's NPDES Permit number is IL0001589.

VI. PROCEDURES FOR REACHING A FINAL DECISION

Pursuant to 35 IAC 705.162(a)(2), the public is given forty-five (45) days to review the application and comment on the draft renewal permit conditions prior to Illinois EPA taking any final permitting action on the application for this RCRA Hazardous Waste Management Permit. The comment period will begin on December 31, 2010 and will end on February 14, 2011. When the Agency makes its final permit decision, notice will be given to the applicant and each person who has submitted written comments or requested notice of the final permit decision. The permit will become effective thirty-five (35) days after service of notice of the decision, unless it is appealed, or at a later date if stated in the permit unless the decision is appealed.

Copies of the permit application, draft permit and fact sheet are available for review at:

Lemont Public Library
50 E. Wend Street
Lemont, Illinois 60439

The administrative record is available for public inspection by appointment only at the Illinois EPA Springfield headquarters from 8:30 a.m. to 5:00 p.m., Monday through Friday. This administrative record contains the permit application, fact sheet, and other supporting documents and correspondence submitted to the Illinois EPA. Inspections of the administrative record must be scheduled in advance by contacting Ms. McGinnis at the phone number or address below.

Mara McGinnis, Office of Community Relations, # 5
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
(217) 524-3288

In response to requests received during the comment period or at the discretion of the Illinois EPA, a public hearing may be held to clarify one or more issues concerning the permit application. A request for a public hearing must be in writing and shall state the nature of the issues proposed to be raised in the hearing. Public notice will be issued forty-five (45) days before any public hearing.

For further information regarding the permit process, to submit written comments on the draft permit, or to request a public hearing, please contact Mara McGinnis at the above telephone number or address.

HAZARDOUS WASTE MANAGEMENT RCRA PERMIT

1978030004 – Will County
USEPA ILD 041550567
CITGO, Lemont Refinery
Log No: B-162R
RCRA Permit – Admin Record File
Permit Draft

Issue Date:
Effective Date:
Expiration Date:
Modification Date:

DRAFT

PERMITTEE
CITGO Petroleum Corporation
135th Street and New Avenue
Lemont, Illinois 60439-3659

A DRAFT renewed RCRA Post-Closure permit is hereby granted to PDV Midwest Refining, LLC as Owner, and CITGO Petroleum Corp. as Operator and Permittee pursuant Section 39(d) of the Illinois Environmental Protection Act and Title 35 Illinois Administrative Code Subtitle G (35 Ill. Adm. Code).

This permit requires CITGO to close and provide post-closure care for the four areas in the hazardous waste land treatment facility (LTF) at the CITGO Lemont Refinery in accordance with the approved permit application and the conditions in this permit. The CITGO Lemont Refinery is located at 135th Street and New Avenue in Lemont, Illinois.

This permit consists of the conditions contained herein and those in the sections and attachments in this permit. The Permittee must comply with all terms and conditions of this permit and the applicable regulations contained in 35 Ill. Adm. Code Parts 702, 703, 705 and 720 through 729 in effect on the effective date of this permit.

This permit is issued based on the information submitted in the approved permit application identified in Section II of this permit and any subsequent amendments. Any inaccuracies found in the information provided in the permit application may be grounds for the termination or modification of this permit (see 35 Ill. Adm. Code 702.187 and 702.186) and potential enforcement action (415 ILCS 5/44(h)).

DRAFT

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

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RCRA POST-CLOSURE PERMIT

CITGO
Lemont Refinery

ILD No. 041550567

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SECTION I – GENERAL FACILITY DESCRIPTION

I.A. OWNER

The facility owner is PDV Midwest Refining, LLC, herein referred to as the "owner". [35 IAC 702.123 & 703.181]

PDV Midwest Refining, LLC
750 Lexington Ave., 10th Floor
New York, New York 10020

I.B. OPERATOR

The facility operator is the CITGO Petroleum Corporation, herein referred to as the "Permittee." [35 IAC 702.121, 702.123 & 703.181]

The Lemont Refinery, CITGO Petroleum Corporation
135th Street & New Avenue
Lemont, IL 60439-3659

I.C. LOCATION

I.C.1. Location of Facility

The CITGO Lemont Refinery is located in Will County in Illinois. CITGO owns approximately 900 acres at this location with approximately 13.5 acres devoted to the management of hazardous waste in four areas in the hazardous waste land treatment facility (LTF). The CITGO Lemont Refinery is located at:

The Lemont Refinery, CITGO Petroleum Corporation
135th Street & New Avenue
Lemont, IL 60439-3659

The general phone number for the facility is 630-257-4000.

I.C.2 Facility Layout Maps

The general location of the CITGO Lemont Refinery is shown in Figure 1. The four hazardous waste land treatment areas at the LTF are shown below on Figure 2.

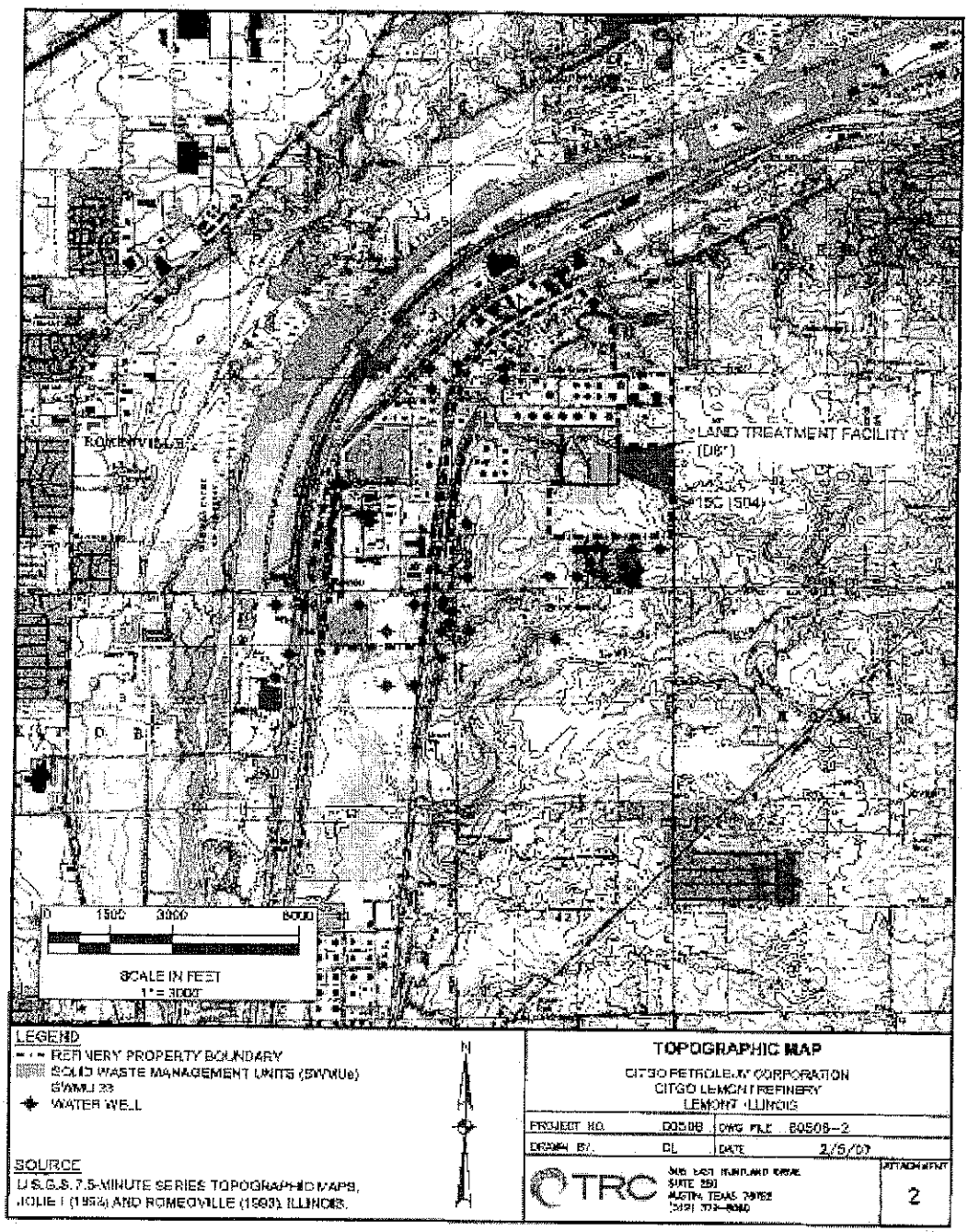


Figure 1: CITGO Lemont Refinery

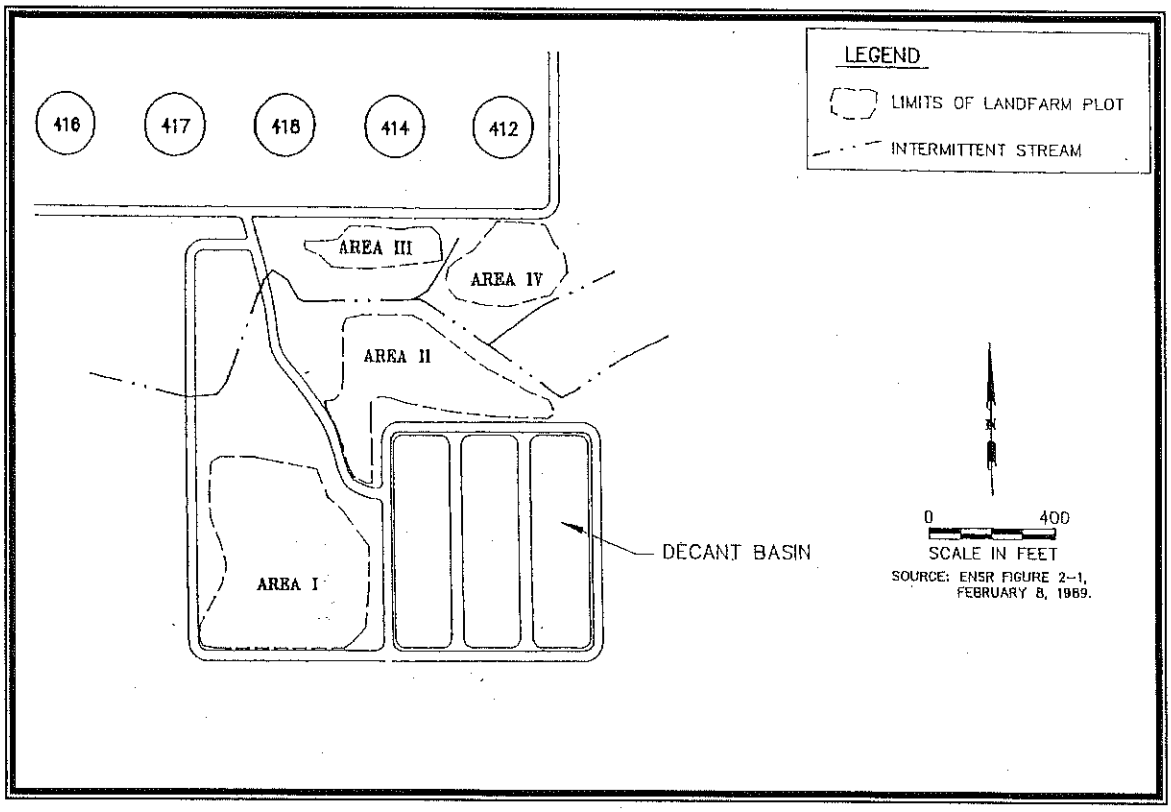


Figure 2: Land Treatment Areas, Intermittent Stream, & Decant Basin

I.D. DESCRIPTION OF HAZARDOUS WASTE MANAGEMENT ACTIVITIES

Operations began at the LTF when Area I was opened in 1973. The remaining three areas were opened in 1980. Wastes were either directly applied to the soil or were dewatered in adjacent decant basins. After dewatering, the solids were then placed on the land treatment areas. After waste was applied, it was incorporated into the soil.

API separator sludge (a listed hazardous waste: K051), was treated at the LTF until September, 1981. After that time, only nonhazardous wastes were applied to the land treatment areas. These nonhazardous wastes included clear well sludge, cooling tower sludge, heavy oil sludge, stormwater basin dredgings and water/wastewater treatment sludges. The majority of the wastes were stormwater basin dredgings and water/wastewater treatment sludges. The last time wastes were applied to the LTF for treatment was in November 1989. In 1995 the Permittee was allowed to place several piles of sludge generated during the closure of the storm water basin on Area I. These piles will be incorporated into the closure of the LTF.

Hazardous Waste Unit Name	Capacity	Hazardous Waste in Units
Area I	5.5 acres	API Separator Sludge (K051)
Area II	4.2 acres	API Separator Sludge (K051)
Area III	1.2 acres	API Separator Sludge (K051)
Area IV	2.6 acres	API Separator Sludge (K051)
Total Acres =	13.5 acres	

SECTION II – APPROVED PERMIT APPLICATION

II.A. APPROVED PERMIT APPLICATION

This permit is based on the information in the approved permit application. The approved permit application consists of the following documents:

Document	Date	Date Received
RCRA Permit Application	April 23, 2007	April 23, 2007
Additional Information	July 31, 2007	August 2, 2007
Additional Information	August 10, 2007	August 10, 2007
Notice of Intent to Close the LTF	June 4, 2010	June 8, 2010
Additional Information	June 9, 2010	June 14, 2010

SECTION III - RCRA CLOSURE

A. INTRODUCTION

The RCRA Post-Closure Permit application addresses the four areas in the land treatment Facility (LTF) at the CITGO Refinery in Lemont, Illinois. As of the date of this permit, these hazardous waste land treatment units (D81) have not been certified closed. Therefore, this Post-Closure permit includes provisions to close these units prior to initiating the post-closure care period.

B. UNIT IDENTIFICATION

1. The Permittee shall perform closure of the following hazardous waste management units (HWMUs) in accordance with RCRA, the Approved Permit Application, and the conditions of this permit:

Type of Waste Unit	Unit Name	Size	Description of Hazardous Waste Contained in the Unit	
Land Treatment	Area I	5.5 acres	API Separator	Sludge (K051)
Land Treatment	Area II	4.2 acres	API Separator	Sludge (K051)
Land Treatment	Area III	1.2 acres	API Separator	Sludge (K051)
Land Treatment	Area IV	2.6 acres 13.5 acres total	API Separator	Sludge (K051)

The locations of these hazardous waste management units (HWMUs) are shown on Figure 1 of this permit.

2. The permittee is prohibited from placing additional hazardous or nonhazardous waste on the land treatment units.

C. INSPECTIONS

1. The Permittee shall inspect the components, structures, and equipment at the land treatment facility in accordance with the inspection schedules identified as Tables F-1, F-2, and F-3 in the Approved Permit Application. The inspection frequencies for the items in the Inspection Schedules shall be those specified in Tables F-1, F-2, and F-3.

2. Results of all inspections and a description of any remedial actions taken shall be documented in the inspection log for the facility.

3. The Permittee shall continue to follow the inspection procedures in this condition until the Illinois EPA approves the closure certification for the LTF.

D. MONITORING REQUIREMENTS

1. The Permittee shall maintain and monitor the LTF groundwater detection monitoring system in accordance with the Approved Permit Application and the conditions in this permit during the closure period.

2. The Permittee shall maintain and monitor the unsaturated zone (soil) monitoring system in accordance with the Approved Permit Application and the conditions in Section IV.D of this permit during the closure period.

E. CLOSURE REQUIREMENTS

1. The Permittee shall close the LTF in accordance with the plans and specifications contained in the closure plan of the Approved Permit Application, and the conditions in this permit.

2. The permittee shall prepare a survey plat indicating the location and dimensions of each of the land treatment areas and any other hazardous waste disposal units with respect to permanently surveyed benchmarks. This plat shall be prepared and certified by a professional land surveyor. The plat shall contain a note, prominently displayed, which states the owner's and operator's obligation to restrict disturbance of the land treatment areas in accordance with the applicable Subpart G regulations and shall state the following:

   a. The waste materials contained in the land treatment areas are considered RCRA hazardous wastes. The wastes in the land treatment areas include API Separator Sludge (K051).

   b. Any material removed from the land treatment areas during future activities must be managed in accordance with 35 Ill. Adm. Code Subtitle G: Waste Disposal.

   The permittee shall file this survey plat with any local zoning authority, or authority with jurisdiction over local land use, and record with land titles, no later than the date the certification of closure of the land treatment areas is submitted to the Illinois EPA. The permittee shall submit the survey plat to the Illinois EPA Bureau of Land Permit Section with the certification of closure for the LTF.

3. As part of the closure activities, the Permittee shall:

   a. Record a notation on the deed to the facility property, or on some other instrument which is normally examined during title search that will in perpetuity notify any potential purchaser of the property that:

      1. The waste material in the LTF is considered a RCRA hazardous waste;

      2. Use of the area is restricted; and

      3. A survey plat and record of the type, location and quantity of waste material in the land treatment areas has been filed with the Illinois EPA, the County Recorder, and any local zoning authority or authority with jurisdiction over local land use.

   b. Attach the survey plat specified in this permit to the deed for the subject property, or on some other instrument which is normally examined during title search, which will in perpetuity notify any potential purchaser of the property of the requirements set forth in the notation on the survey plat.

   c. Submit the survey plat specified in this permit to the County Recorder, any local zoning authority and any other authority over local land use.

4. Within sixty (60) days after closure of the LTF is complete, the Permittee shall submit certification to the Illinois EPA by registered mail that the units have been closed in accordance with the approved closure plan. The following items must be included with the closure certification:

   a. A Class 1* permit modification requesting to modify this permit to delete those conditions that do not pertain to a post-closure permit. This submittal shall include a properly completed IEPA permit application form LPC-PA23. The PA23 Form must be signed and sealed by a qualified Professional Engineer registered in the State of Illinois and the owner/operator must check the box identifying the appropriate certification statement.

   b. The closure certification form in Attachment A to this permit. Signatures must meet the requirements of 35 Ill. Adm. Code Section 702.126. The qualified Professional Engineer registered in the State of Illinois should be present at all critical, major points (activities) during the closure. These might include soil sampling, soil removal, backfilling, final cover placement, etc. The frequency of inspections by the qualified Professional

Engineer must be sufficient to determine the adequacy of each critical activity.

c. A Closure Documentation Report which includes the following items:

i. A description of how the LTF was closed in accordance with the approved closure plan.

ii. Documentation that the requirements for the survey plat specified in Conditions E.2 and E.3 above have been met.

iii. Documentation that the owner/operator has recorded the notation on the deed (or other instrument) as specified in Condition E.3.

iv. The total volume of waste in each land treatment area. The term waste includes wastes resulting from decontamination activities.

v. Scaled drawings showing the horizontal and vertical boundaries of each land treatment area and the run-on / run-off control systems.

vi. The volume of any waste and waste residue removed, including wastes generated during decontamination procedures.

vii. A description of the method of waste handling and transport.

viii. Copies of the waste manifests.

ix. A description of the sampling and analytical methods used.

x. A chronological summary of closure activities and the cost involved.

xi. Tests performed, methods, and results.

xii. Color photographs of closure activities which document conditions before, during and after closure.

xiii. A scale drawing of all excavated or decontaminated areas and sample locations.

5. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in

activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

F. FINANCIAL ASSURANCE

1. The permittee shall maintain financial assurance for closure of the LTF of at least $346,567 (in 2006 dollars). The financial assurance maintained by the facility shall be sufficient to meet the requirements at 35 Ill. Adm. Code 724 Subpart H.

2. Financial assurance must be maintained for closure of the LTF until the Illinois EPA approves the closure certification for the units in accordance with 35 IAC 724.243.

3. The Permittee shall demonstrate continuous compliance with the liability insurance requirements at 35 Ill. Adm. Code 724.247 and the documentation requirements of 35 Ill. Adm. Code 724.251 until the permitted units are certified closed.

   a. The permittee shall maintain liability coverage for sudden accidental occurrences of at least $1 Million per occurrence with an annual aggregate of at least $2 Million.

   b. The permittee shall maintain liability coverage for nonsudden accidental occurrences of at least $3 Million per occurrence with an annual aggregate of at least $6 Million.

SECTION IV - POST-CLOSURE CARE

A. SUMMARY

Hazardous waste management units where waste is left in place must receive post-closure care for at least 30 years after completion of closure. Pursuant to 35 IAC Part 724, activities required during post-closure care include, but are not limited to (1) maintenance of final cover, (2) monitoring of the groundwater, and (3) providing financial assurance for post-closure activities.

B. UNIT IDENTIFICATION

1. The Permittee shall provide post-closure care for the four areas in the hazardous waste land treatment facility (LTF) in accordance with the Approved Permit Application and the conditions of this permit:

Type of Waste Unit	Unit Name	Size	Description of Hazardous Waste Contained in the Unit
Land Treatment	Area I	5.5 acres	(K051) API Separator Sludge
Land Treatment	Area II	4.2 acres	(K051) API Separator Sludge
Land Treatment	Area III	1.2 acres	(K051) API Separator Sludge
Land Treatment	Area IV	2.6 acres 13.5 acres total	(K051) API Separator Sludge

C. MONITORING, MAINTENANCE, & RECORD KEEPING

1. The Permittee shall implement the approved Post-Closure Plan contained in the Approved Permit Application. All post-closure care activities must be conducted in accordance with the conditions in this permit and the provisions of the approved Post-Closure Plan.

2. The Permittee shall begin the post-closure care period for the hazardous waste management unit(s) listed in Section B above after completion of closure of the unit(s) as specified in Section III of this permit. The permittee shall continue the post-closure care of these units for at least thirty (30) years after that date.

3. The Illinois EPA may require institutional controls restricting the future use of the site if necessary to protect public health and the environment, including permanent

prohibition of the use of the site for purposes which may create an unreasonable risk of injury to human health or the environment. The permittee shall file such restrictions of record in the Office of the Recorder of the county in which the hazardous waste disposal site is located. If necessary, the Illinois EPA shall file such restrictions of record after any administrative and judicial challenges to such restrictions have been exhausted.

4. The Permittee shall not allow any use of the units designated in Section B to be used in a manner that will disturb the integrity of the final cover, the run-on or run-off control systems, or the function of the facility's monitoring systems during the post-closure care period unless such use is necessary to protect public health or the environment.

5. The Illinois EPA may require, at partial and/or final closure, continuation of any of the security requirements during part or all of the post-closure period.

6. The Permittee must request a permit modification to authorize a change in this permit or the approved Post-Closure Plan. This request must be in accordance with applicable requirements of Parts 702, 703 and 724 and must include a copy of the amended Post-Closure Plan for approval by the Illinois EPA.

7. The Permittee shall maintain and monitor the LTF groundwater detection monitoring system in accordance with the Approved Permit Application and the conditions in this Permit during the post-closure period.

8. The Permittee shall maintain and monitor the unsaturated zone monitoring system in accordance with the Approved Permit Application and the conditions in this Permit during the post-closure period.

9. The Permittee shall maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, and other events.

10. The Permittee shall prevent run-on and run-off from eroding or otherwise damaging the final cover.

11. The Permittee shall maintain a record of all inspections, monitoring, and maintenance activities in the facility's operating record. A copy of the operating record must be kept on-site.

12. The permittee shall not grow food chain crops on the land treatment facility cover system.

13. The Permittee shall comply with the requirements for the land treatment facility described in the approved permit application and the conditions in this permit as follows:

    a. Continue all operations (including pH control) necessary to enhance degradation and transformation and sustain immobilization of hazardous constituents in the treatment zone to the extent that such measures are consistent with other post-closure care activities.

    b. Maintain a vegetative cover over closed portions of the unit.

    c. Maintain the run-on control system.

    d. Maintain the run-off management system.

    e. Control wind dispersal of hazardous waste.

    f. Continue to comply with any prohibitions or conditions concerning growth of food-chain crops.

    g. Continue unsaturated zone monitoring.

D. UNSATURATED ZONE MONITORING

1. The Permittee shall monitor the soils below the treatment zone in the LTF in accordance with the Unsaturated Zone Monitoring (UZM) Plan in the Approved Permit Application and the conditions in this permit to determine if any hazardous constituents have migrated out of the treatment zone.

2. Sample Locations: The Permittee shall randomly select the locations for soil core samples in accordance with the procedure specified in Appendix I.1.6-1 of the Approved Permit Application. A minimum of eight soil samples shall be collected from the four land treatment areas as specified below:

Area	Size	No. of Samples
Area I	5.5 acres	3
Area II	4.2 acres	2
Area III	1.2 acres	1
Area IV	2.6 acres	2
TOTAL	13.5 acres	8

3. Sample Depth: The Permittee shall collect soil core samples immediately below the treatment zone in accordance with the procedures in the UZM Plan in the Approved Permit Application and the conditions in this permit.

The treatment zone at the permitted units is defined as a depth of the historically applied waste plus no more than an additional five feet below the original land surface. The elevations of the original land surface are identified in Figures 2-1 and 2-2 in the Unsaturated Zone Monitoring Plan in Appendix I.1.6-1 of the Approved permit application. The elevations of the original soil surface may be confirmed by visually inspecting the color of the soils immediately above and below the elevations identified in Figures 2-1 and 2-2.

4. Sampling and Analysis Procedures: The Permittee shall follow the sampling and analysis procedures in Appendix I.1.5 and Appendix I.1.6-1 of the Approved Permit Application and the conditions in this permit.

    a. Analytical methods used must be in accordance with the USEPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) Third Edition, Final Update III, Revision 4," dated December 1996 – or most recent version. The analytical methods must utilize reporting limits that are equal to or less than the monitoring limits for the parameters specified in the permit. The practical quantitation limits (PQLs) may be used as monitoring limits in those cases where the lab is unable to reach the monitoring limits. The laboratory report must identify all instances when a PQL was used in place of a monitoring limit specified in this permit.

    b. The SW-846 test methods, sample holding times, containers, and preservatives specified in Table 4-3 in Appendix I.1.5 of the Approved Permit Application must be used when collecting and analyzing soil samples required by the Unsaturated Zone Monitoring program in the application and the conditions in this permit.

5. Sampling Frequency and Schedule: The Permittee shall collect soil samples annually in the fourth quarter of each calendar year.

6. Analytical Parameters: The soil samples collected shall be analyzed for the following parameters as specified below:

    a. The soil samples collected every fifth year shall be analyzed for the parameters listed in the following table:

Metals	Volatile Compounds	Semivolatile Acid-Extractable Compounds	Semivolatile Base/ Neutral Extractable Compounds
Antimony	*Acetone*	Benzenethiol	*Acenaphthylene*
Arsenic	Benzene	Cresols (o, m, & p)	Anthracene
Barium	*n-Butylbenzene*	2,4-Dimethylphenol	Benzo(a)anthracene
Beryllium	sec-Butylbenzene	2,4-Dinitrophenol	Benzo(b)fluoranthene
Cadmium	Carbon disulfide	4-Nitrophenol	Benzo(k)fluoranthene
Chromium	Chlorobenzene	Phenol	*Benzo(g,h,i)perylene*
Cobalt	Chloroform		Benzo(a)pyrene
Lead	1,2-Dichloroethane		Bis(2-ethylhexyl)phthalate
Mercury	1,4-Dioxane		Butyl benzyl phthalate
Nickel	Ethylbenzene		Chrysene
Selenium	Ethylene dibromide		Dibenz(a,h)acridine
Vanadium	*4-Isopropyltoluene*		Dibenz(a,h)anthracene
	Methyl ethyl ketone		Dichlorobenzenes
	n-Propylbenzene		Diethyl phthalate
	Styrene		7,12-Dimethylbenz(a)anthracene
	Toluene		Dimethyl phthalate
	1,3,5-Trimethylbenzene		Di(n)butyl phthalate
	1,2,4-Trimethylbenzene		Di(n)octyl phthalate
	Xylene (total)		Fluoranthene
			Fluorene
			Indene
			Indeno(1,2,3-cd)pyrene
			Methyl chrysene
			1-Methyl naphthalene
			2-methylnaphthalene
			Naphthalene
			Phenanthrene
			Pyrene
			Pyridine
			Quinoline

Note: Non-Skinner List constituents are shown in italics.

b. Soil samples collected during all other years shall be analyzed for the parameters listed in the following table:

Metals	Volatiles	Semivolatiles
Antimony	Acetone	Acenaphthylene
Arsenic	Benzene	Anthracene
Barium	n-Butylbenzene	Benzo(a)anthracene
Beryllium	sec-Butylbenzene	Benzo(g,h,i)perylene
Cadmium	Ethylbenzene	Butyl benzyl phthalate
Chromium	4-Isopropyltoluene	Chrysene
Cobalt	Methyl ethyl ketone	Di(n)octyl phthalate
Lead	n-Propylbenzene	Dibenz(a,h)anthracene
Mercury	Toluene	Fluorene
Nickel	1,3,5-Trimethylbenzene	Indeno(1,2,3-cd)pyrene
Selenium	1,2,4-Trimethylbenzene	Methyl chrysene
Vanadium	Xylene (total)	1-Methylnaphthalene
		2-Methylnaphthalene
		Naphthalene
		Phenanthrene
		Pyrene

c. If the sampling events required by Condition IV.D.6.a (every fifth year) identify compounds that are not included in Condition IV.D.6.b, those compounds shall be added to the list of compounds in Condition IV.D.6.b.

7. The results of each soil sampling event shall be submitted to the Illinois EPA by January 15 of each year.

8. The Permittee shall determine whether there is a statistically significant change over background values for any hazardous constituent to be monitored under Condition IV.D.6 each time the soil core monitoring is conducted. This determination shall be made using the statistical procedures contained in the Approved Permit Application and this condition. The Permittee shall make this determination within thirty (30) days after receipt of lab analysis results.

Concentrations greater than the Monitoring Limit for each compound specified in the following table shall be considered to be a statistically significant increase (SSI).

Chemical	Monitoring Limit	Chemical	Monitoring Limit
Inorganics (mg/kg)		**Semivolatile Organic Compounds (µg/kg)**	
Antimony	6.69	Acenaphthylene	330
Arsenic	55.6	Anthracene	660
Barium	1028.00	Benzo(a)anthracene	660
Beryllium	2.53	Benzo(b)fluoranthene	660
Cadmium	9.11	Benzo(k)fluoranthene	660
Chromium	368.00	Benzo(g,h,i)perylene	330
Cobalt	60.10	Benzo(a)pyrene	660
Lead	504.00	Bis(2-ethylhexyl)phthalate	660
Mercury	0.90	Butyl benzyl phthalate	660
Nickel	138.00	Chrysene	660
Selenium	0.54	Dibenz(a,h)acridine	330
Vanadium	446.00	Dibenz(a,h)anthracene	660
Volatile Organic Compounds (µg/kg)		Dichlorobenzenes	660
Acetone	20	Diethyl phthalate	660
Benzene	5	7,12-Dimethyl-benz(a)anthracene	660
n-Butylbenzene	5	Dimethyl phthalate	660
sec-Butylbenzene	5	Di(n)butyl phthalate	660
Carbon disulfide	5	Di(n)octyl phthalate	660
Chlorobenzene	5	Fluoranthene	660
Chloroform	5	Fluorene	330
1,2-Dichloroethane	5	Indene	330
1,4-Dioxane	500	Indeno(1,2,3-cd)pyrene	330
Ethylbenzene	5	Methyl chrysene (TIC only)	330
Ethylene dibromide	10	1-Methylnaphthalene	660
4-Isopropyltoluene	5	2-methylnaphthalene	330
Methyl ethyl ketone	20	Naphthalene	660
n-Propylbenzene	5	Phenanthrene	660
Styrene	5	Pyrene	660
Toluene	5	Pyridine	660
1,3,5-Trimethylbenzene	5	Quinoline	330
1,2,4-Trimethylbenzene	5	Benzenethiol	3300
Xylene (total)	5	Cresols (o, m, & p)	660
		2,4-Dimethylphenol	660
		2,4-Dinitrophenol	3300
		4-Nitrophenol	3300
		Phenol	660

9. If the Permittee determines, pursuant to Condition IV.D.8, that there is a statistically significant increase (SSI) of hazardous constituents below the treatment zone, the Permittee shall notify the Illinois EPA of this finding within seven days, indicating which constituents have shown statistically significant increases. In addition, within ninety (90) days of determining there is a SSI the permittee shall apply for a permit modification to modify the post-closure practices at the facility to maximize the success of degradation, transformation or immobilization processes in the treatment zone.

10. The Permittee need not submit the modification request required by Condition IV.D.9 if they successfully demonstrate that a source other than the regulated unit caused the increase or that the increase resulted from an error in sampling, analysis or evaluation within the ninety (90) day time period referenced in Condition IV.D.9 above.

E. INSPECTIONS

1. The Permittee shall inspect the vegetative cover system, security system & benchmarks, Stormwater Control System, and Groundwater & Unsaturated Zone Monitoring Systems at the LTF in accordance with the approved permit application. All inspections shall be recorded using the Post-Closure Period Inspection Form in Appendix I.2.2 of the Approved Permit Application. The results of all inspections shall be maintained in the Inspection Log which shall be located in the CITGO Lemont Refinery's Environmental Department File Room.

2. The permittee shall inspect the LTF quarterly and within 24 hours of any precipitation event that yields 4 or more inches of rain in a 24 hour period.

3. The permittee shall record all repairs made to the LTF that are noted during an inspection in accordance with the Repair Log located in Appendix I.2.2.6 of the Approved Permit Application. All repairs made to the LTF shall be recorded in a log which shall be located in the CITGO Lemont Refinery's Environmental Department File Room.

F. NOTICES AND CERTIFICATION

1. After final closure has been certified, the person or office specified in the approved Post-Closure Plan must keep the Post-Closure Care Plan during the remainder of the post-closure period.

2. No later than sixty (60) days after completion of the established post-closure care period for each hazardous waste disposal unit, the Permittee shall submit to the Illinois EPA, by registered mail, a certification that the post-closure care for the

hazardous waste disposal unit was performed in accordance with the specifications in the approved Post-closure Plan. The certification must be signed by the owner or operator and a qualified professional engineer registered in the State of Illinois. Documentation supporting the professional engineer's certification must be furnished to the Illinois EPA upon request until the Illinois EPA releases the Permittee from the financial assurance requirements for post-closure care.

SECTION V:
GROUNDWATER DETECTION MONITORING PROGRAM

A. SUMMARY

Groundwater parameters monitored in the uppermost aquifer below the facility indicate that, at the present time, no groundwater impacts have occurred. Therefore, a Groundwater Detection Monitoring Program meeting the requirements of 35 Ill. Adm. Code 724.198 shall be implemented at the facility.

The CITGO Lemont Refinery has six (6) existing wells to monitor groundwater in the lower portion of the Lemont Drift aquifer that are utilized for the Groundwater Detection Monitoring Program. The average depth to groundwater in the wells is approximately 74 feet. The Groundwater Detection Monitoring Program will therefore consist of five (5) downgradient wells, one (1) upgradient well and eighteen (18) piezometers for determining groundwater surface elevation only.

B. DEFINITIONS

As used herein, the words or phrases set forth below shall have the following definitions:

1. "CITGO" shall refer to CITGO Petroleum Corporation-Lemont Refinery.

2. "Site" or "Facility" refers to the location at135th Street & New Avenue, Lemont, County of Will, State of Illinois.

3. "Permittee" refers to the Facility.

4. "Illinois EPA" refers to the Illinois Environmental Protection Agency.

5. "RCRA" shall mean the Resource Conservation and Recovery Act as defined by Section 3.425 of the Environmental Protection Act, 415 ILCS 5/1 (2006).

6. "Permit" refers to the RCRA Part B Permit.

7. "Point of Compliance" refers to the vertical surface located at the hydraulically downgradient limits of the waste management area (Land Treatment Facility (LTF)) extending down into the uppermost aquifer underlying the regulated unit.

8. "Ft-bgs" refers to the number of feet below the ground surface.

9. "Ft-MSL" refers to the number of feet below the ground surface referenced to mean sea level.

10. "Detected" shall mean a concentration equal to or above the PQL listed in the latest promulgated version of USEPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) for the applicable analytical methods specified in the approved Sampling and Analysis Procedures, which are incorporated by reference in Condition V.H of the Permit.

11. "Uppermost Aquifer" refers to the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically connected with this aquifer in the vicinity of the facility. The uppermost aquifer in the vicinity of the CITGO facility has been identified as the Lemont Drift and consists of sandy silt, silty sand, sand and gravel layers occurring in the lower part of the Lemont Drift and the dolomite bedrock underlying the drift.

12. "Stick-up" refers to the height of the referenced survey datum. This point is determined within $\pm$ 0.01 foot in relation to mean sea level, which in turn is established by reference to an established National Geodetic Vertical Datum.

C. IMPLEMENTATION

1. The Permittee shall implement the Groundwater Detection Monitoring Program upon the effective date of this Permit. On that date, the groundwater monitoring requirements set forth in this Permit shall supersede those previously established.

2. The Permittee shall carry out the detection monitoring specified in this Permit on the groundwater beneath the CITGO Land Treatment Facility in Lemont, Illinois. The uppermost aquifer in the vicinity of the facility has been identified as the sandy silt, silty sand, sand and gravel layers occurring in the lower part of the Lemont Drift and the dolomite bedrock underlying the drift. For the purpose of this Permit and in accordance with the 35 Ill. Adm. Code Part 620 regulations, the uppermost aquifer has been designated Class I: Potable Resource Groundwater.

3. The Point of Compliance, defined as the vertical surface located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer underlying the regulated unit, is delineated by the wells identified as the point of compliance wells in Condition V.D.1 and illustrated in Figure B-9 of the approved Permit Renewal Application.

D. WELL LOCATIONS AND CONSTRUCTION

1. The Permittee shall install and maintain groundwater monitoring wells and piezometers at the locations identified in the table below to allow for the collection of groundwater samples and elevations from the uppermost aquifer. The location

of these wells and piezometers are specified in Figure B-9 of the approved Permit Renewal Application.

IEPA Well No.	Facility Well No.	Well Depth (ft)	Boring Depth Elevation (ft MSL)	Screen Depth Interval (ft)
G01D	UA-1*	106.90	611.90	92.1 - 102.1
G02D	UA-2**	86.60	605.64	70.0 - 80.0
G03D	UA-3**	89.55	608.18	74.7 - 84.7
G04D	UA-4**	87.00	608.98	72.1 - 82.1
G05D	UA-5**	92.60	602.24	72.1 - 82.1
G06D	UA-6**	96.10	605.55	79.0 - 89.0

* Denotes Upgradient Wells
** Denotes Point of Compliance Wells

Piezometers

P01D	B-1***	111.10	584.10	101.90 - 106.90
P02D	B-2	110.20	586.86	100.90 - 105.90
P03D	B-3	125.00	587.07	116.00 - 121.00
P04D	B-4	99.25	584.09	90.30 - 95.30
P05D	B-5	103.10	585.39	94.77 - 99.77
P06D	B-6	113.10	587.36	103.92 - 108.92
P07D	B-7	117.42	587.70	107.67 - 112.67
P08D	B-8	118.25	589.20	108.51 - 113.51
P09D	B-9	108.70	584.47	99.50 - 104.50
P10D	B-10	122.20	591.26	117.01 - 122.01
P11D	B-11	131.85	589.24	122.92 - 127.92
P12D	B-12	135.10	588.19	126.20 - 131.20
P13D	B-13	128.00	590.26	119.70 - 124.70
P14D	B-14	99.50	586.58	91.00 - 96.00
P15D	B-15	136.93	584.61	127.50 - 132.50
P16D	B-16	124.15	595.48	115.90 - 120.90
P17D	B-17	127.05	599.97	122.90 - 127.90
P18R	B-18R	120.25	586.23	110.00 – 120.00

*** Denotes Upgradient Piezometer

2. Construction of any new monitoring well/piezometer must be at a minimum in accordance with the diagram contained in Attachment B to this Permit unless otherwise approved in writing by the Illinois EPA. Any new monitoring well/piezometer to be installed must be continuously sampled and logged on

Illinois EPA boring logs which can be found at http://www.epa.state.il.us/land/regulatory-programs/permits-and-management/forms/index.html#groundwater-permits.

3. The Permittee shall notify the Illinois EPA within thirty (30) days in writing if any of the wells identified in Condition V.D.1 above are damaged or the structural integrity has been compromised. A proposal for the replacement of the subject well shall accompany this notification. The well shall not be plugged until the new well is on-line and monitoring data has been obtained and verified, unless the well is extremely damaged and would create a potential route for groundwater contamination. Prior to replacing the subject well, the Permittee shall obtain written approval from the Illinois EPA regarding the proposed installation procedures and construction.

4. Should any well become consistently dry or unserviceable; a replacement well shall be provided within ten (10) feet of the existing well. This well shall monitor the same zone as the existing well and be constructed in accordance with the current Illinois EPA groundwater monitoring well construction standards at the time that the well is replaced. A replacement well which is more than ten (10) feet from the existing well or does not monitor the same geologic zone must be approved by the Illinois EPA and designated as a new well.

5. The Permittee shall submit boring logs, construction diagrams and data sheets from installation and development of a new or replacement well to the Illinois EPA at the address below with thirty (30) days of the date that installation of the well is completed. In addition, the Permittee shall submit certification that plugging and abandonment of a well was carried out in accordance with the approved procedures to the Illinois EPA at the address below within thirty (30) days of the date that the well is plugged and abandoned. All information should be submitted to the appropriate State Agencies.

   Illinois Environmental Protection Agency
   Bureau of Land - #33
   Permit Section
   1021 North Grand Avenue East
   Post Office Box 19276
   Springfield, Illinois 62794-9276

6. All wells/piezometers shall be equipped with protective caps and locks. Monitoring wells or piezometers located in high traffic areas must protected with bumper guards.

7. All groundwater monitoring wells and piezometers not utilized in the groundwater monitoring system, but retained by the facility, must be constructed and maintained in accordance with 77 Ill. Adm. Code 920 regulations. Monitoring

wells and piezometers that are improperly constructed must be abandoned in accordance with Condition V.D.3.

E. MONITORING PARAMETERS

1. The Permittee shall determine groundwater quality at each groundwater monitoring well identified in Condition V.D.1, at both the upgradient and point of compliance locations, semi-annually during the active life of the four areas in the hazardous waste land treatment facility (D81) (including closure and post-closure care period). Samples collected during the semi-annual sampling events of each year shall be analyzed for the constituents below:

Semi-Annual Groundwater Sampling

Field Parameters	Storet	Units
pH	00400	Standard Units
Specific Conductance	00094	micromhos/cm
Temperature of Water Sample	00011	(°F)
Turbidity	45626	NTUs
Depth to Water (below land surface)	72019	Feet
Depth to Water (below measuring point)	72109	Feet
Elevation of Groundwater Surface	71993	Ft-MSL
Elevation of Bottom of Well #	72020	Ft-MSL
Elevation of Measuring Point (top of casing)##	72110	Ft-MSL

Shall be determined during the second sampling event each year.
Shall be surveyed once every five (5) years, at the request of the Illinois EPA, or whenever the elevation changes as required by Condition V.G.2.

Indicator Parameters	Storet	Units
TOX	78115	µg/L
TOC	00680	µg/L
Arsenic (dissolved)	01000	µg/L
Selenium (dissolved)	01145	µg/L

NOTE: All parameters with the "(dissolved)" label to the right shall be determined using groundwater samples which have been filtered through a 0.45 micron filter and used for statistical purposes along with TOX and TOC. Should a parameter be detected in groundwater and found to be statistically above background, the subsequent monitoring event must include total (unfiltered) analysis and a comparison to the appropriate 35 Ill. Adm. Code 620, Class I, Groundwater Quality Standard must then take place.

2. Alternate concentration limits may be established in accordance with 35 Ill. Adm. Code 724.194(b) where the Permittee can determine a constituent will not pose a

substantial hazard to human health or the environment. The alternate concentration limits proposed by the facility must be approved by the Illinois EPA.

3. The Permittee shall establish background values in accordance with the procedures specified in Section E of the approved Permit Renewal Application as well as the following procedures:

   a. Background groundwater quality for a monitoring parameter or constituent shall be based on data from four (4) consecutive sampling events of the upgradient groundwater monitoring well for two (2) years.

   b. In developing the data base used to determine a background value for each parameter or constituent, the Permittee shall take a minimum of four replicate samples from each upgradient well during each of the four (4) semi-annual background sampling events. An equal number of replicate samples will be taken from each upgradient well to ensure equal weightings in statistics.

   c. For those monitoring parameters or constituents not detected above the practical quantitation limit (PQL) during background gathering, the PQL shall be the established background value.

F. DETECTION MONITORING PROGRAM

1. The Permittee shall determine groundwater quality at each monitoring well identified in Condition V.D.1 semi-annually during the active life of the regulated unit (including the closure and post-closure care periods). The Permittee shall express the groundwater quality at each monitoring well in a form necessary for the determination of statistically significant changes (i.e. means, variances, etc.).

2. The Permittee shall determine the groundwater flow rate and direction in the uppermost aquifer semi-annually, and report at least annually from monitoring wells identified in Condition V.D.1.

3. The Permittee shall determine whether there is a statistically significant increase, (or decrease in the case of pH) over the background values established for each parameter identified in Condition V.E.1 each time groundwater quality is determined at the point of compliance. In determining whether such a change has occurred, the Permittee must compare the groundwater quality at each monitoring well identified in Condition V.D.1 to the background value derived in accordance with the statistical procedures specified in Section E of the approved Permit Renewal Application.

G. GROUNDWATER ELEVATION

1. The Permittee shall determine the groundwater surface elevation referenced to mean sea level (MSL) at each well each time groundwater is sampled in accordance with Condition V.J.3.

2. The Permittee shall determine the surveyed elevation of "stick-up" referenced to MSL when the well is installed (with as-built diagrams) and every five (5) years, or at the request of the Illinois EPA, or whenever the elevation changes in accordance with Condition V.J.5.

3. Elevation, as referenced to MSL, of the bottom of each monitoring well (Storet 72020), is to be reported at least annually. The mandatory measurement shall be taken during the second semi-annual sampling event each year.

H. SAMPLING AND ANALYTICAL PROCEDURES

1. The Permittee shall use the techniques and procedures described in Section E of the approved Permit Renewal Application, except as modified below, when obtaining and analyzing samples from the groundwater monitoring wells described in Condition V.D.1:

   a. Samples shall be collected using the techniques described in Section E of the approved Permit Renewal Application.

   b. Samples shall be preserved and shipped (when shipped off-site for analysis) in accordance with the procedures specified in Section E of the approved Permit Renewal Application.

   c. Samples shall be analyzed in accordance with the procedures specified in Section E of the approved Permit Renewal Application.

   d. Samples shall be tracked and controlled using the chain of custody procedures specified in Section E of the approved Permit Renewal Application.

I. STATISTICAL PROCEDURES

When evaluating the monitoring results in accordance with Condition V.F, the Permittee shall use the following procedure:

1. The statistical methods to be used shall be as specified in Section E of the approved Permit Renewal Application.

2. Analytical data shall be compared to the parameter background values established in accordance with Section E of the approved Permit Renewal Application.

3. For Constituents which have not been detected in the groundwater, the practical quantitation limit (PQL) shall be used as the background concentration.

J. REPORTING AND RECORDKEEPING

1. The Permittee shall enter all monitoring, testing, and analytical data obtained in accordance with Condition V.E, V.F, V.G, V.H and V.I in the operating record. The data must include all computations, calculated means, variances, t-statistic values and t-statistic results or results of statistical test that the Illinois EPA has determined to be equivalent.

2. Samples collected to meet the requirements of the groundwater monitoring program described in Conditions V.E, V.F, V.G, and V.I shall be collected and reported, as identified in the table below. All additional information required by the groundwater monitoring program (as specified in Conditions V.E, V.F, V.G and V.I) shall also be submitted to the Illinois EPA at the address listed in Condition V.D.5 in accordance with this schedule.

Samples to be Collected During The Months of	Results Submitted to the Illinois EPA by the Following	Parameters
April - June	July 15	Condition V.E.1
October - December	January 15	Condition V.E.1

3. Groundwater surface elevation data, measured pursuant to Condition V.G.1 shall be collected semi-annually and submitted to the Illinois EPA according to the schedule in Condition V.J.2.

4. The Permittee shall report the groundwater flow rate and direction in the uppermost aquifer as required by Condition V.F.2 during the second semi-annual sampling event of the year.

5. The Permittee shall report the surveyed elevation, as required by Condition V.G.2, of the top of the well casing "stick-up", referenced to MSL in accordance with the following schedule:

   a. For wells identified in Condition V.D.1, every five (5) years (during the second semi-annual sampling event), or at the request of the Illinois EPA, or whenever the elevation changes.

b. For any new wells, at the time of installation and reported in the as-built diagrams, subsequent measurements shall be made every five (5) years (during the second semi-annual sampling event), or at the request of the Illinois EPA, or whenever the elevation changes.

6. Elevation of the bottom of each monitoring well identified in Condition V.D.1, as referenced to MSL, is to be reported at least annually. This measurement shall be taken during the second semi-annual sampling event (Storet 72020) each year in accordance with Condition V.G.3.

7. Information required by Conditions V.J.2, V.J.3, V.J.5 and V.J.6 must be submitted in an electronic format. The information is to be submitted, as fixed-width text files formatted as found in Attachment B, in accordance with the schedule found in Condition V.J.2 above. Additional guidance regarding the submittal of the information in an electronic format can be found at http://www.epa.state.il.us/land/regulatory-programs/electronic-intro.html.

8. The Permittee shall submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC-592) as a cover sheet for any notices or reports required by the Permit for identification purposes. Only one copy of the LPC-592 must accompany your submittal. However, the Permittee must submit one (1) original and (excluding the groundwater and leachate monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report you submit to the Illinois EPA. The form is not to be used for Permit modification requests.

9. The Permittee shall report all information to the Illinois EPA in a form which can be easily reviewed. All submittals must contain tables of data drawings and text (as necessary) to accurately describe the information contained in the submittal.

10. If the Permittee determines, pursuant to Condition V.F.3 that there is a statistically significant increase for any of the parameters specified in Condition V.E.1 at any monitoring well at the point of compliance, the Permittee shall:

a. Notify the Illinois EPA in writing indicating what parameters and wells have shown statistically significant increases and provide all statistical calculations. This notification shall be submitted to the Illinois EPA within seven (7) days of the date that the increases are discovered.

b. Sample the groundwater in all wells listed in Condition V.D.1 and determine the concentration of all constituents identified in Appendix I of 35 Ill. Adm. Code 724 such that the results will accompany the permit modification required by Condition V.J.10.d below.

c. For any Appendix I compounds found in the analysis pursuant to this condition, the Permittee may resample within one month and repeat the analysis for those compounds detected. If results of the second analysis confirm the initial results, then these constituents will form the basis for compliance monitoring. If the Permittee does not resample for the compounds pursuant to this condition, the hazardous constituents found during the initial Appendix I analysis will form the basis for compliance monitoring.

d. Submit to the Illinois EPA an application for a permit modification to establish a compliance monitoring program meeting the requirements of 35 Ill. Adm. Code 724.199. The application shall be submitted to the Illinois EPA within ninety (90) days of the date that the increase is discovered. Furthermore, the application must include the following information:

i. An identification of the concentration of any 35 Ill. Adm. Code 724, Appendix I constituents found in the groundwater at each monitoring well at the point of compliance;

ii. Any proposed changes to the groundwater monitoring system at the facility necessary to meet the requirements 35 Ill. Adm. Code 724.199;

iii. Any proposed changes to the monitoring frequency, sampling and analysis procedures, or methods or statistical procedures used at the facility necessary to meet the requirements of 35 Ill. Adm. Code 724.199; and

iv. For each hazardous constituent found at the compliance point, a proposed concentration limit under 35 Ill. Adm. Code 724.194(a)(1) or 724.194(a)(2), or a notice of intent to seek an alternate concentration limit for a hazardous constituent under 35 Ill. Adm. Code 724.194(b).

e. Submit to the Illinois EPA a corrective action feasibility plan to meet the requirements of 35 Ill. Adm. Code 724.200 unless the concentrations of all hazardous constituents identified under Condition V.J.10.b above are listed in 35 Ill. Adm. Code 620.410 and their concentrations do not exceed the respective Groundwater Quality Standards or the Permittee has sought an alternate concentration limits under Condition V.J.10.d.iv above for every hazardous constituent identified under Condition V.J.10.b above. This plan must be submitted to the Illinois EPA within 180 days of the date the increase is discovered.

f. Submit to the Illinois EPA all data necessary to justify any alternate concentration limit for a hazardous constituent sought under Condition V.J.10.d.iv above. This plan must be submitted to the Illinois EPA within 180 days of the date the increases is discovered.

11. If the Permittee determines, pursuant to Condition V.F.3, that there is a statistically significant increase above the background values for the parameters specified in Condition V.E.1, the Permittee may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. The Permittee shall submit a permit modification application in accordance with Condition V.J.10.d unless the demonstration successfully shows that a source other than the regulated unit caused the increase or that the increase resulted from errors in sampling, analysis or evaluation and the Illinois EPA concurs.

To make this demonstration, the Permittee shall:

a. Notify the Illinois EPA in writing that they intend to make this demonstration. This notification must be submitted to the Illinois EPA within seven (7) days of the date that the increase is discovered.

b. Submit a report to the Illinois EPA which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation. This report must be submitted within ninety (90) days of the date that the increase is discovered.

c. Submit to the Illinois EPA an application to make any appropriate changes to the Groundwater Detection Monitoring Program. This application must be submitted within ninety (90) days of the date that the increase is discovered.

d. Continue to monitor in accordance with the detection monitoring program at the facility.

K. REQUEST FOR PERMIT MODIFICATION

1. If the Permittee determines that the Groundwater Detection Monitoring Program no longer satisfies the requirements of 35 Ill. Adm. Code 724.198, the Permittee must, within ninety (90) days, submit an application for a permit modification to the Illinois EPA to make any appropriate changes to the program which will satisfy the regulations.

2. Conditions in this section of the Permit may be modified in accordance with 35 Ill. Adm. Code 705.128 if there is cause for such modification, as defined in 35 Ill.

Adm. Code 702.184. Causes for modification identified in this section include, but are not limited to, alterations to the permitted facility, additional information which would have justified the application of different permit conditions at the time of issuance, and new regulations.

SECTION VI
CORRECTIVE ACTION ACTIVITIES

A. INTRODUCTION

1. In accordance with Section 3004 of RCRA and 35 IAC 724.201, CITGO shall institute such corrective action as necessary to protect human health and the environment from all releases of hazardous wastes or hazardous constituents listed in Appendix H of 35 IAC Part 721 from any solid waste management unit (SWMU) at its Refinery in Lemont, Illinois. For the purpose of this permit, the constituents of concern being addressed under this section are the Modified Skinner List of constituents provided in the approved permit Renewal Application. Corrective action at this facility must be conducted by:

   a. conducting a RCRA Facility Investigation (RFI) to determine whether releases of hazardous wastes and hazardous constituents have occurred from any solid waste management unit (SWMU) at its facility, and if so, the nature and extent of the release(s); and

   b. based upon the results of the RFI, developing and implementing a Corrective Measures Program which describes the necessary corrective actions which will be taken. The required corrective actions shall be those actions necessary to protect human health and the environment from all releases of hazardous wastes or hazardous constituents, listed in afore-mentioned Modified Skinner List of constituents for the facility, above site-specific cleanup objectives from any of the SWMUs.

2. This facility's original RCRA permit was issued by Illinois EPA on September 18, 1997 (Effective Date: October 23, 1997). Section IV of the permit contained corrective action requirements for the solid waste management units (SWMUs) listed in Section VI.B below at the facility.

3. The facility has completed a substantial amount of investigation and, as necessary, remediation at these SWMUs. This permit summarizes the corrective action activities completed to date and identifies the efforts which must still be carried out to complete corrective action for the SWMUs of concern at the facility.

4. Unless there is a desire to modify specific requirements set forth in this Section, information submitted to Illinois EPA regarding the corrective action requirements set forth in this Section is not a request to modify this permit nor subject to the requirements of 35 Ill. Adm. Code 703, Subpart G.

5. The Permittee must provide corrective action, as appropriate, for any future releases from SWMUs present at the facility.

6. The requirements of 35 Ill. Adm. Code 742 must be met, as appropriate, in determining remediation objectives for corrective action activities. In addition, the requirements of 35 Ill. Adm. Code 620 and 724 must be met during implementation of the RCRA corrective action program at this facility.

7. Illinois EPA's final actions on all corrective action-related submittals made by the Permittee are subject to the appeal provisions of Section 39 and 40 of the Illinois Environmental Protection Act.

8. The Permittee must conduct and complete Inspection and Maintenance Program for the storm water sewer system, and the process wastewater sewer system in accordance with the approved plans.

B. CONDUCTING THE RCRA FACILITY INVESTIGATION

The Permittee must conduct a RCRA Facility Investigation (RFI) to determine the nature and extent of releases of hazardous wastes and hazardous constituents from various SWMUs at the subject facility. In general, this investigation has been or is being done on a SWMU by SWMU basis. To date, CITGO has conducted a substantial amount of investigation at the SWMUs of concern at this facility.

The RFI for each SWMU is carried out in two phases. Each phase will provide for a more detailed evaluation of each Solid Waste Management Unit identified. Phase I will define whether a release from the SWMU has occurred to the environmental media of concern. Phase II will define the nature and extent of any release from the SWMU to soil, groundwater, and surface water/sediments. A more detailed discussion of the goals of each phase of the RFI is presented in Section II of Attachment C-1. The Scope of Work for the RFI is provided as Attachment C-1 to the Permit.

1. CITGO has conducted a substantial amount of investigative and remedial effort to date. A summary of these activities, based on Illinois EPA's letters approving plans/reports associated with these efforts is contained in Attachment C-2 of this Permit.

2. Based upon the results of the RCRA Facility Assessment which was conducted by the Illinois EPA for this facility, the SWMUs identified in the following table must be evaluated in the RFI for potential releases to certain environmental media of concern also identified in the table. The SWMUs have been grouped into two categories (Group 1 and Group 2) based on their estimated potential risk to human health and the environment. The Group 1 SWMUs have either had known releases in the past or pose the highest potential for releases that could impact the

environment. Group 2 SWMUs are not known to have had a release and have a low potential for impact. In addition, all new SWMUs discovered during the course of carrying out this corrective action program are added to Group 2 (please note that this is not a complete listing of SWMUs at the subject facility).

In addition to identifying the SWMUs which must be evaluated in an RFI, the table below identifies the current status of corrective efforts at each SWMU (see the "CA Status" column in the table). Furthermore, the table identifies those SWMUs where groundwater must be addressed as part of the corrective action program (see "Need to Address GW" column). Note that following abbreviations are used in the table below:

CM = Corrective Measures
CMP = Corrective Measures Plan
ELUC = Environmental Land Use Control
CWPP = Construction Worker Precaution Plan
NFA = No Further Action
TBD = To Be Determined
I/C= Industrial/Commercial

Group I

SWMU	Name	CA Status	Need to Address GW?
2 A-E	Former Process Wastewater Line (Big Inch)	NFA for soil only issued on 1/31/06. A supplemental investigation report received on 11/23/09 and under IEPA review (CA-134).	Yes
3	Former North Plant API Separator and Above Ground Corrugated Plate Separator	NFA for soil only issued on 8/24/05.	Yes
4	Hot Oil Line, Seneca Petroleum Storage Tank	NFA issued on 4/12/07.	No
7	Interceptor Trench; Canal Dock	RFI Phase II Workplan approved on 4/25/08. IEPA verbally approved supplemental workplan on 7/8/10. CMP received on 10/25/10.	TBD
11A	Recycle Tank; 11A - Mobil Interface Tank 436	Phase II RFI Report received on 4/17/09 and under IEPA review (CA-123).	TBD

SWMU	Name	CA Status	Need to Address GW?
11B	Recycle Tank; 301 Tank	Phase II RFI Report received on 4/17/09 and under IEPA review (CA-124).	TBD
12	Tank 201 and Proximate Area	NFA on soil only issued on 10/4/10 (CA-126 & 128); ELUC required for I/C use.	Yes
17	Intermittent Stream/Stormwater Conveyance	NFA issued on12/17/07; area access control required.	No
19D	Former Sludge Drying Areas	Phase II RFI/CM report approved and NFA for soil only issued on 12/18/08; ELUC required for I/C use.	Yes (as part of GMZ)
21	Vertical Oil Storage Tanks at the Stormwater Basin (SWB)	Phase I Report approved and NFA issued on 4/12/07; ELUC required for I/C use.	No
24	Former API Separator	Determination of further CA work be completed as a part of the facility's GMZ made on 8/24/05.	Yes (as part of GMZ)
30	Former Primary Light Oil (PLO) Underground Soil/Groundwater	Phase II RFI Workplan approved on 4/25/08. CMP received on 8/4/09 and under IEPA review (CA-125).	TBD
31A	Former Underground Storage Tanks located at Active Solvent Loading Rack Area	NFA for Soil only issued on 12/17/07; ELUC required for I/C use, engineered barrier and CWPP. Draft ELUC was received on 5/23/08 and under IEPA review (CA-98).	Yes
31B-E	Former Underground Storage Tanks located at Former Service Station	NFA for soil only issued on 8/24/05. Draft ELUC was received on 5/28/08 and under IEPA review (CA-99).	Yes

SWMU	Name	CA Status	Need to Address GW?
32	Former Process Blending UST at the Process Blend Center	NFA for soil only issued on 7/17/06.	Yes
33	Groundwater Monitoring Zone (GMZ) around beneath the storm water basins	GMZ Re-evaluation approved on 5/17/07. Continued GMZ operation is required.	Yes (as GMZ)
34	French Drain System	NFA on Soil only issued on 6/16/09; ELUC required for I/C and CWPP. A revised CMP received to request a modification to the ELUC requirement on 4/8/10 and under IEPA review (CA-138).	Yes
36	Former USTs Located at South Plant Maintenance Area	Phase I RFI report approved and NFA issued on 7/17/06.	No
37	Former USTs Located near WWTP Outfall to Chicago Sanitary & Ship Canal	Phase I RFI report approved and NFA issued on 7/17/06.	No

Group II

SWMU	Name	CA Status	Need to Address GW?
1	Former Empty Drum Storage Area	NFA issued on 6/1/04.	No
5	Former Dump Area for Lime Sludge Seneca Tank Location	Phase I RFI report received on 10/2/08 and under IEPA review (CA-103).	TBD
10	North Plant Heat Exchanger Bundle Cleaning Pad	Phase I RFI report received on 10/2/08 and under IEPA review (CA-104).	TBD
13	Sludge Drying Area	Phase I RFI report received on 10/2/08 and under IEPA review (CA-105).	TBD

SWMU	Name	CA Status	Need to Address GW?
15A-B	Wastewater Treatment Sludge Decant Basin within Land Treatment Facility	Phase I RFI report received on 10/2/08 and under IEPA review (CA-106).	TBD
16	Sludge Application Area	NFA issued on 11/27/06.	No
18	Waste Staging Area	Phase I RFI report received on 10/2/08 and under IEPA review (CA-107).	TBD
19A	Former Sludge Drying Area	Phase I RFI report received on 10/2/08 and under IEPA review (CA-107).	TBD
19B	Former Sludge Drying Area	CM completion report received on 11/13/09 and under IEPA review (CA-130).	TBD
19C	Former Sludge Drying Area	Phase I RFI report received on 10/2/08 and under IEPA review (CA-108).	TBD
20	Active Drum Staging Area	Phase I RFI report received on 10/2/08 and under IEPA review (CA-109).	TBD
25A	Heat Exchanger Bundle Cleaning Pad	NFA issued on 6/16/09; closure activities upon closure of the unit. ELUC required for I/C use.	TBD upon Closure
25B	Heat Exchanger Bundle Cleaning Pad	Phase I RFI report received on 10/2/08 and under IEPA review (CA-110).	TBD upon Closure
25C	Supplementary Heat Exchanger Bundle Cleaning Pad -- Cleaning Building	Phase I RFI report received on 10/2/08 and under IEPA review (CA-111).	TBD
35	Red Dye Spill Area	Phase I RFI report received on 10/2/08 and under IEPA review (CA-112).	TBD

SWMU	Name	CA Status	Need to Address GW?
43A	Suspected Spill Location Along the Product Pipe Line: Canal Dock Piping	Phase I RFI report received on 4/17/09 and under IEPA review (CA-122).	TBD
43B	Suspected Spill Location Along the Product Pipe Line: Primary Light Oil Pump	Phase I RFI report received on 4/17/09 and under IEPA review (CA-122).	TBD
43C	Suspected Spill Location Along the Product Pipe Line: Refinery Flare	Phase I RFI report received on 4/17/09 and under IEPA review (CA-122).	TBD
43D	Suspected Spill Location Along the Product Pipe Line: Barge	Phase I RFI report received on 4/17/09 (CA-122).	TBD
43E	Suspected Spill Location Along the Product Pipe Line: Above Ground Tank	Phase I RFI report received on 4/17/09 (CA-122).	TBD
43F	Suspected Spill Location Along the Product Pipe Line: Lift Station Pump	Phase I RFI report received on 4/17/09 and under IEPA review (CA-122).	TBD
43G	Suspected Spill Location Along the Product Pipe Line: Process Drain System	Phase I RFI report received on 4/17/09 and under IEPA review (CA-122).	TBD
43H	Suspected Spill Location Along the Product Pipe Line: Pipeline Primary Light Oil	Phase I RFI report received on 4/17/09 (and under IEPA review CA-122).	TBD
43I	Suspected Spill Location Along the Product Pipe Line: Condenser (Sulfur Dioxide)	Phase I RFI report received on 4/17/09 and under IEPA review (CA-122).	TBD
43J	Pipeline Release Near Tanks 92 and 108	NFA for Soil only was issued on 2/24/10.	Yes
44	Spill at the Gasoline Transfer Line	Phase I RFI report received on 10/2/08 and under IEPA review (CA-113).	TBD

SWMU	Name	CA Status	Need to Address GW?
45	Contaminated Fill Area near Canal Dock	Newly discovered SWMU. SWMU Assessment Report was received on 8/31/10.	TBD

3. The Groundwater Management Zone (GMZ) Monitoring Program and Site-Wide Groundwater Monitoring Program are currently being conducted as part of the Corrective Action Program.

   a. The GMZ was originally approved by the Illinois EPA on April 11, 1994 and was identified as SWMU 33 in the RCRA Permit. The current GMZ program implemented at a portion of the south plant includes: 14 monitoring wells, 15 bedrock piezometers, two staff gauges located in the Illinois and Michigan (I&M) Canal, and the Green Coke Storage Area (GCSA) sump (which controls the groundwater by inward gradient control pumping). The GMZ monitoring requirements currently include:

      (1) Semi-annual groundwater and surface water elevation measurements;

      (2) Semi-annual groundwater sampling and analysis for VOCs;

      (3) No sampling of monitoring wells in which there is a presence or evidence of LNAPL; and

      (4) Semi-annual and annual monitoring reports submitted to Illinois EPA.

      Note that any changes to the above monitoring requirements are subject to Illinois EPA's approval under the Corrective Action Program.

   b. The Site-Wide Groundwater Monitoring Program consists of a network of wells used to determine the quality of groundwater as it relates to multiple SWMUs. CITGO has proposed to address the groundwater exposure route at SWMUs that are required to address groundwater contamination during Phase I/II RFI at each SWMU through proposed Site-Wide Groundwater Monitoring Program.

   c. CITGO's "Site-Wide Groundwater Monitoring and Investigation Workplan" submitted to Illinois EPA on January 31, 2007 was approved with conditions and modifications on May 31, 2007.

d. CITGO's Current Conditions Report and Proposed Workplan for Future Groundwater Management was submitted to Illinois EPA on September 15, 2008. This workplan was approved with conditions and modifications on April 26, 2010 (Log No. B-162-CA-102). This letter approved the site-wide groundwater management approach.

e. It is appropriate to address groundwater contamination at the identified SWMUs required to address groundwater, through the proposed site-wide groundwater management approach. However, should the facility choose to obtain an NFA for groundwater on SWMU by SWMU basis, the facility will be required to address groundwater contamination at each identified SWMU and the Illinois EPA will make the NFA determinations on a SWMU by SWMU basis.

4. CITGO has been conducting inspection and maintenance work at Process Sewers (SWMU No. 38), Storm Sewers (SWMU No. 39), and Open Flow Ditches (SWMU No. 40) in accordance with a workplan approved by Illinois EPA on February 21, 2003 as required in Section VI.D of this permit. As a result of the on-going investigation, some of the segments/structures of the investigated Process and Storm Sewers were determined to require further corrective action investigation. The table below identifies those locations which, to date, require a more formal investigation and have thus determined to be SWMUs. Note that this is not the complete list of the defects which require further investigation. The facility must update the list of Storm and Process Sewer related SWMUs in its annual sewer report required in Section VI.D below.

SWMUs Identified from RCRA Sewer Investigation

SWMU 38 – Process Sewer

38a	Process Sewer Line Segment: 31-MH8-DP-01 to 31-MH8-DP-02	NFA was issued on 7/8/10; ELUC required for I/C and GW restriction.
38b	Process Sewer Line Segment: 31-MH5-DP-03 to 31-MH5-DP-01	NFA on soil only issued on 10/4/10 (CA-126 & 128); ELUC required for I/C use.
38c	Process Sewer Structure: 31-MH5-DP-01	NFA on soil only issued on 10/4/10 (CA-126 & 128); ELUC required for I/C use. Groundwater must be investigated.
38d	Coker Road Process Sewer- (7) Line Segments: 52-LS51-DP-01 to 52-MH34-DP-01	Phase I RFI/Closure report received on 6/7/10 and under IEPA review (CA-141).

SWMU 39 – Storm Sewer

39a	Storm Sewer – Line Segment: 130-MH79-DRC-01 to 130-MH75-DRC-02	Phase II RFI Report received on 11/30/09 and under IEPA review (CA-131).
39b	Storm Sewer – Line Segment: 130-MH75-DRC-05 to 130-MH75-DRC-32; Structure: 130-MH75-DRC-05	Phase II RFI Report received on 11/30/09 and under IEPA review (CA-132).

5. CITGO will be required to establish environmental land use controls (ELUC) for most of the SWMUs listed in Condition VI.B.2 above. All ELUC required must be developed and recorded in accordance with 35 Ill. Ad, Code 742 Subpart J and the Illinois EPA approval letters regarding RCRA corrective action.

6. The RFI has been initiated at all SWMUs; status of the RFI to date for each SWMU is described in the table provided in Conditions VI.B.2 and 4 above.

   In general, following the submittal of the RFI Phase I/II report, the Illinois EPA's BOL will review the submitted data. The Illinois EPA's BOL will offer CITGO the opportunity to meet with Illinois EPA staff to discuss the results of the review prior to finalization of the review comments. The Illinois EPA's BOL will then notify CITGO in writing of the results of the review. This notification will discuss the status of each of the SWMUs evaluated as part of the Phase I/II RFI.

   a. If the Illinois EPA's BOL determines, based upon the data provided within and obtained from the Phase I/II Workplan for each SWMU investigated, that (1) there is no potential for release from that SWMU to the environmental media of concern and (2) there has been no release of hazardous wastes or hazardous constituents to the environmental media of concern from that SWMU, then no further action will be required for that SWMU.

   b. If the Illinois EPA's BOL determines, based on data from the Phase I/II RFI for each SWMU investigated, that (1) there has been a release to any environmental media of concern, or (2) there currently is a release to any environmental media of concern, then the nature and extent of the release must be defined. If the Group 1 Phase I/II RFI did not adequately define nature and extent to the satisfaction of the Illinois EPA, then a Phase II (or supplemental Phase II) investigation will be required as discussed in 6.c below.

c. If the results of the Phase I/II RFI are inconclusive or incomplete, a Phase II (or Supplemental Phase II) investigation must be conducted by CITGO. This investigation shall be conducted to collect additional information so that a conclusive determination can be made regarding a current/past release from a SWMU. This investigation shall be carried out in accordance with the RFI guidance provided above.

d. The final letter sent to the facility conveying the results of the review will:

1. Identify those SWMUs for which no further investigation is needed;

2. Identify those SWMUs for which no further action is required;

3. Identify those SWMUs that must be further investigated as part of a Phase II or a Supplemental Investigation to determine the rate and extent of migration of hazardous waste or hazardous constituents and the concentrations of the hazardous waste or hazardous constituents in the environmental media potentially impacted by a release from the SWMU;

4. Identify, for each SWMU requiring further investigation, the associated environmental media which must be further investigated;

5. Identify those SWMUs and associated environmental media for which corrective measures are required.

e. Illinois EPA action on the final Phase I/II RFI report and proposed Release Criteria will be subject to the appeal provisions of Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

7. If CITGO is notified in writing in accordance with Condition B.6 that any SWMUs identified during the Phase I/II or Supplemental Phase II RFI as needing further investigation, then CITGO must develop and submit a Phase II RFI Workplan. Phase II of the RFI shall focus on determining the rate and extent of migration of hazardous waste or hazardous constituents and the concentrations of the hazardous waste or hazardous constituents in any affected media (soil, groundwater, or surface water). Such a workplan must be submitted no more than 90 days after the facility is notified in writing in accordance with Condition B.6 above. The Scope of Work for Phase II or Supplemental Phase II of the RFI is contained in Attachment C-1 to the Permit.

8. The Illinois EPA's BOL will approve, approve with modifications, or disapprove the RFI Phase II or Supplemental Phase II workplan in writing and provide comments regarding the required corrections or modifications.

a. Within 60 days of the receipt of such comments, CITGO must modify the plan or submit a new plan for the Illinois EPA's BOL approval.

b. Within 60 days of, or by a due date specified by, the Illinois EPA's approval of the workplan, CITGO shall begin implementing the plan according to the terms and schedule established in the workplan.

c. Illinois EPA action on the workplan will be subject to the appeal provisions of Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

9. CITGO must submit a report documenting the efforts carried out in accordance with the approved RFI Phase II or Supplemental Phase II Workplan and the schedule established within the workplan. This report must be prepared in a manner which summarizes the overall Phase II RFI efforts and specific information required to be obtained in the Phase II RFI Workplan as described in Attachment C-1. F.

10. Following submittal of the RFI Phase II or Supplemental Phase II report, the Illinois EPA's BOL will review the data and notify CITGO in writing of the results.

a. If the Illinois EPA determines that the nature and extent of hazardous waste or hazardous constituents from a SWMU release, above the Release Criteria, has not been adequately defined during the Phase II investigation, then CITGO must conduct a supplemental investigation.

b. If the Illinois EPA's BOL determines that further investigation is not required, based on data obtained from the RFIs, the Illinois EPA reserves the right to require that corrective measures be conducted for the SWMUs of concern to address releases identified through the Phase I, Phase II, and supplemental investigations.

c. If the Illinois EPA determines that (1) there has not been a release of hazardous waste or hazardous constituents from a SWMU to the groundwater (2) but there is a potential for future releases of hazardous waste or hazardous constituents from a SWMU to the groundwater, then the Illinois EPA may require a longer term groundwater monitoring program at any SWMU where substantial soil contamination exists (as determined by the Illinois EPA), or at any SWMU which would meet the definition of a land disposal unit. This need for additional monitoring is dependent on the corrective action taken in response to the waste and/or contaminated soil present at the SWMU.

d. The Illinois EPA's response to the Phase II or Supplemental Phase II report will:

i. Identify those SWMUs investigated as part of the Phase II RFI for which no further action is required.

ii. Identify those SWMUs investigated as part of the Phase II RFI for which no further investigation is needed.

iii. Identify those SWMUs investigated as part of the Phase II RFI for which supplemental investigations must be conducted.

iv. Identify, for each SWMU requiring further investigation, the associated environmental media which must be investigated further and the information to be obtained during the investigation.

v. Identify those SWMUs and associated environmental media for which corrective measures are required.

vi. Identify those SWMUs for which longer-term monitoring is required.

e. Illinois EPA action on the final RFI Phase II or Supplemental Phase II report will be subject to the appeal provisions of Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

C. CORRECTIVE MEASURES REQUIREMENTS

If it has been determined from the Phase I/II RFI that corrective measures must be taken in response to releases from any SWMU that have not been addressed by approved interim measures, then CITGO shall implement a Corrective Measures Program (CMP). The CMP is divided into five phases:

1. Phase I should consist of (1) development of final cleanup objectives, (2) discussion of those SWMUs requiring corrective measures and (3) a preliminary evaluation of the corrective action alternatives available for each SWMU requiring corrective action.

2. Phase II should consist of (1) detailed evaluation of the corrective measure alternatives for each SWMU and (2) development of a conceptual design of the corrective action chosen for each SWMU including remedial system(s) and/or institutional controls.

3. Phase III should consist of development and submission of the final design plans for the corrective action and should include the preparation of the operation and maintenance plans.

4. Phase IV is the actual construction/installation of the selected corrective measure.

5. Phase V is operation, maintenance, and monitoring of the selected corrective action to ensure it is properly protecting human health and the environment.

Attachment D describes the requirements for each Phase of the CMP. The Illinois EPA's decision to approve or disapprove of any element of the CMP described in Attachment D shall be subject to the appeal provisions of Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

The Phase I CMP report must be submitted within 120 days after receipt of the notification from the Illinois EPA that corrective measures are necessary to protect human health and the environment from observed releases from SWMUs at the facility. The purpose of the CMP is to describe the procedures which will be followed in providing corrective action at each SWMU requiring corrective measures. The proposed corrective measures must be sufficient to protect human health and the environment from the observed release. Subsequent submittals associated with the corrective measures process must be submitted to the Illinois EPA in accordance with the schedule in the Phase I CMP Report.

D. SEWER INSPECTION AND MAINTENANCE PLAN

1. CITGO's workplan providing an inspection and Maintenance Plan for the following SWMUs: (1) Process Sewer System (SWMU No. 38); (2) Storm Sewer System (SWMU No. 39) ; and (3) Open Flow Ditches (SWMU No. 40). This workplan for a multi-year phased investigation of the sewer systems was approved by Illinois EPA on February 21, 2003 (Log No. B-162-CA-41).

2. The RCRA Sewer Inspection and Maintenance activities commenced in 2004 (Year 1). CITGO has developed a 10-year plan for the sewer inspection program, which included the division of the facility into seven (7) areas: Area 1, Area 2, Area 3, Area 4A, Area 4B, Area 5, and Area 6. Inspection and Maintenance of sewer segments in each Area is conducted in accordance with the approved plan. All defects discovered during the sewer inspection are rated in accordance with Illinois EPA approved workplans.

3. A report summarizing the results of the approved inspection and maintenance plan must be developed for each calendar year. The report shall be developed in accordance with the procedures set forth in the approved plan and be submitted to Illinois EPA by March 31 of each following year.

4. Any defect discovered during the RCRA sewer inspection and maintenance program must be evaluated to be rated for structural and environmental defects in

accordance with the procedures approved by Illinois EPA for potential release to the surrounding environment. If a defect is determined to required additional investigation, a workplan shall be developed and submitted for further corrective action investigation and remediation as necessary. Each of these defects will be assigned a SWMU ID and any further corrective action will be conducted in accordance with the procedures set forth in Sections VI.B and VI.C of this Permit.

5. CITGO completed the inspection and maintenance activities for Open Flow Ditches (SWMU No. 40) in 2005, which consisted of approximately 26,000 linear feet of open ditches at the facility.

E. FINANCIAL ASSURANCE FOR CORRECTIVE ACTION

1. CITGO shall prepare a cost estimate for the completion of any corrective measure(s) required under this Permit, in order to provide financial assurance for completion of corrective action, as required under 35 IAC 724.201(b). Such a cost estimate will be based upon the cost of contamination investigations and assessments for the SWMU(s), and design, construction, operation, inspection, monitoring, and maintenance of the corrective measure(s) to meet the requirements of this Permit. This cost estimate must be submitted to the Illinois EPA's BOL and revised according to the following schedule:

Facility Submission	Due Date
Updated Corrective Action Cost Estimate	Within 120 days after the effective date of this Permit (as a Class I* modification request)
Revised Cost Estimate (with the initial submittal of each RFI Report and/or CMP report)	Upon written Illinois EPA request

2. As indicated in Condition VI.E.1 above, an estimate of the cost of completing corrective action at this facility must be submitted to Illinois EPA within 120 days of the date of the effective date of this permit. This submittal must be developed on a SWMU by SWMU basis and include all unit costs and resource-needs used to develop the estimates.

3. CITGO shall demonstrate continuous compliance with 35 IAC 724.201 by providing documentation of financial assurance using a mechanism specified in 35 IAC 724.243, in at least the amount of the cost estimate required under Condition E.1 the words "completion of corrective action" shall be substituted for "closure and/or post-closure," as appropriate in the financial instrument specified in 35 IAC 724.251. The documentation shall be submitted to the Illinois EPA's BOL within 60 days after the submittal of the initial or revised cost estimates required under Condition E.1. The Illinois EPA's BOL

may accept financial assurance for completion of corrective action in combination with another financial mechanism acceptable under 35 IAC 724.246 at its discretion.

F. FUTURE RELEASES FROM SWMUS

Whenever the Permittee(s) becomes aware that any SWMU identified in Condition B.2, that was not found to be releasing hazardous waste or constituents during the RFI, or was not addressed under the corrective action requirements of this permit, may have started to release hazardous waste or constituents, the Permittee(s) shall report this information to the Illinois EPA's BOL in writing within thirty (30) days of discovery. Upon the Illinois EPA's written request, the Permittee(s) shall determine the nature and extent of the contamination by following the procedures set forth in Conditions VI.B through VI.D, beginning on the date of notification, rather than on the effective date of the permit.

G. NOTIFICATION REQUIREMENTS FOR AN ASSESSMENT OF NEWLY-IDENTIFIED SOLID WASTE MANAGEMENT UNIT(S)

1. The Permittee(s) shall notify the Illinois EPA's BOL in writing of any newly-identified SWMU(s) discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, no later than sixty (60) calendar days after discovery. For the purposes of this permit, Anewly-identified SWMUs shall mean all SWMUs located at the subject facility for which corrective actions have not previously been required by this permit, or which have not been previously listed in the RFA for this facility. The notification shall provide the following information, if available:

    a. The location of the newly-identified SWMU in relation to other SWMUs on a scaled map or drawing;

    b. The type and past and present function of the SWMU;

    c. The general dimensions, capacities, and structural description of the unit (available drawings and specifications);

    d. The period during which the unit was operated;

    e. The specifics on all materials, including but not limited to, wastes and hazardous constituents, that have been or are being managed at the SWMU, to the extent available; and

    f. The results of any relevant available sampling and analysis which may aid in determining whether releases of hazardous wastes or hazardous constituents have occurred or are occurring from the unit.

2. If the submitted information demonstrates a potential for a release of hazardous waste or constituents from the newly identified SWMU, the Illinois EPA may request in writing, that the Permittee(s) prepare a Solid Waste Management Unit (SWMU) Assessment Plan and a proposed schedule of implementation and completion of the Plan for any additional SWMU(s) discovered subsequent to the issuance of this Permit.

3. Within 120 calendar days after receipt of an Illinois EPA request for a SWMU Assessment Plan, the Permittee(s) shall prepare a SWMU Assessment Plan consistent with the requirements of VI.B through VI.E above. This SWMU Assessment Plan must also propose investigations, including field investigations if necessary, to determine the release potential to specific environmental media for the newly-identified SWMU. The SWMU Assessment Plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste and hazardous constituents from the newly-discovered SWMU(s) to the environment.

4. After the Permittee(s) submits the SWMU Assessment Plan, the Illinois EPA shall either approve, approve with conditions or disapprove the Plan in writing. If the plan is approved, the Permittee(s) shall begin to implement the Plan within sixty (60) calendar days of receiving such written notification, or by the date specified by Illinois EPA. If the Plan is disapproved, the Illinois EPA shall notify the Permittee(s) in writing of the Plans deficiencies and specify a due date for submittal of a revised plan.

5. The Permittee(s) shall submit a report documenting the results of the approved SWMU Assessment Plan to the Illinois EPA in accordance with the schedule in the approved SWMU Assessment Plan. The SWMU Assessment Report shall describe all results obtained from the implementation of the approved SWMU Assessment Plan. The Illinois EPA's response will be similar to that described in Conditions VI.B through VI.E above.

H. COMPLETION OF CORRECTIVE MEASURES

1. CITGO shall complete those corrective measures contained in the Corrective Measures Program approved in accordance with Condition VI.C above and/or interim measures approved in accordance with Condition VI.I below. CITGO may request the Illinois EPA's BOL to consider corrective action complete at any point. The petition for such a request should include a demonstration of the following:

   a. That there have been no releases of hazardous waste or hazardous constituents to any media from the SWMUs; or

b. That all releases are below the Release Criteria (initial corrective action objectives); or

c. That all releases of hazardous waste or hazardous constituents to all media targeted within the RFI for investigation have been remediated to the target cleanup objectives specified within the approved Phase I CMP Report or an interim measures plan, and shall also describe how releases will be prevented in the future; or

d. That, through the use of an Illinois EPA approved risk assessment, the corrective action is successful in protecting human health and the environment; or

e. Some combination of the above demonstrations.

Appropriate documentation and certification must accompany such a demonstration. The actual documentation to be submitted will be described in the Phase II CMP Report.

CITGO shall be notified in writing if the Illinois EPA's BOL approves the request that the corrective actions can be considered complete. The notification from the Illinois EPA's BOL to CITGO may include a release from the financial requirements of Condition VI E above. This action shall be subject to the appeal provisions set forth in Section 39(a) and 40(a) of the Environmental Protection Act.

2. A determination of no further action shall not preclude the Illinois EPA's BOL from requiring continued or periodic inspections of the SWMU(s) or continued or periodic monitoring of the specified environmental media when site-specific circumstances indicate that releases of hazardous wastes including hazardous constituents are likely to occur, if necessary to protect human health and the environment. Any requirement for long-term groundwater monitoring will only be required at a SWMU where substantial soil contamination exists (as determined by the Illinois EPA) or at any SWMU which would meet the definition of a land disposal unit. Any such requirement will be subject to the appeal provisions of Section 39(a) and 40(a) of the Illinois Environmental Protection Act.

3. A determination of no further action shall not preclude the Illinois EPA's BOL from requiring further investigations, studies, or remediation at a later date, if new information or subsequent analysis indicates a release or likelihood of a release from a SWMU at the facility that is likely to pose a threat to human health or the environment. In such a case, the Illinois EPA's BOL shall initiate a Permit modification to rescind the no further action determination.

I. INTERIM MEASURES

At any time during the RFI the Permittee may initiate interim measures and/or voluntary corrective actions for the purpose of preventing continuing releases and/or mitigating the results of releases and/or mitigating the migration of hazardous wastes or hazardous constituents. It may not be necessary to conduct all phases of the RFI investigation if the Illinois EPA's BOL and the Permittee(s) agree that a problem can be corrected, or a release cleaned up, without additional study and/or without a formal corrective measures program (CMP).

1. Prior to implementing any interim measures, the Permittee must submit detailed information regarding the proposed interim measures to the Illinois EPA's BOL for approval. This information shall include, at a minimum:

   a. Objectives of the interim measures: how the measure is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long-term solution at the facility;

   b. Design, construction, and maintenance requirements;

   c. Schedules for design and construction; and

   d. Schedules for progress reports.

2. If the Illinois EPA's BOL determines that a release cannot be addressed without additional study and/or a formal CMP, then the Illinois EPA's BOL will notify the Permittee that these must be performed. Any proposal made under this provision or any other activity resulting from such proposal, including the invocation of dispute resolution, shall not affect the schedule for implementation of the RFI or of any other portion of the permit.

3. If the Illinois EPA determines that interim measures are necessary to protect human health or the environment, the Permittee will be notified by way of a permit modification.

SECTION VII: STANDARD CONDITIONS FOR POST-CLOSURE CARE

GENERAL REQUIREMENTS

1. EFFECT OF PERMIT. The existence of a RCRA permit shall not constitute a defense to a violation of the Environmental Protection Act or Subtitle G, except for development, modification or operation without a permit. Issuance of this permit does not convey property rights or any exclusive privilege. Issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or infringement of state or local law or regulations. (35 Ill. Adm. Code 702.181)

2. PERMIT ACTIONS. This permit may be modified, reissued or revoked for cause as specified in 35 Ill. Adm. Code 703.270 through 703.273 and Section 702.186. The filing of a request by the Permittee for a permit modification or revocation, or a notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition. (35 Ill. Adm. Code 702.146)

3. SEVERABILITY. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. (35 Ill. Adm. Code 700.107)

4. PERMIT CONDITION CONFLICT. In case of conflict between a special permit condition and a standard condition, the special condition will prevail. (35 Ill. Adm. Code 702.160)

5. DUTY TO COMPLY. The Permittee shall comply with all conditions of this permit except for the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance constitutes a violation of the Environmental Protection Act and is grounds for enforcement action; permit revocation or modification; or for denial of a permit renewal application. (35 Ill. Adm. Code 702.141 and 703.242)

6. DUTY TO REAPPLY. If the Permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee must apply for a new permit at least 180 days before this permit expires, unless permission for a later date has been granted by the Illinois EPA. (35 Ill. Adm. Code 702.142 and 703.125)

7. PERMIT EXPIRATION. This permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application (see 35 Ill. Adm. Code 703.181-703.209) and through no fault of the Permittee the Illinois EPA has not issued a new permit as set forth in 35 Ill. Adm. Code 702.125.

8. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or

reduce the permitted activity in order to maintain compliance with the conditions of this permit. (35 Ill. Adm. Code 702.143)

9. DUTY TO MITIGATE. In the event of noncompliance with the permit, the permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. (35 Ill. Adm. Code 702.144)

10. PROPER OPERATION AND MAINTENANCE. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory, and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. (35 Ill. Adm. Code 702.145)

11. DUTY TO PROVIDE INFORMATION. The Permittee shall furnish to the Illinois EPA, within a reasonable time, any relevant information which the Illinois EPA may request to determine whether cause exists for modifying, revoking and reissuing or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Illinois EPA, upon request, copies of records required to be kept by this permit. (35 Ill. Adm. Code 702.148)

12. INSPECTION AND ENTRY. The Permittee shall allow an authorized representative of the Illinois EPA, upon the presentation of credentials and other documents as may be required by law, to:

    a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

    b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

    c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

    d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the appropriate Act, any substances or parameters at any location. (35 Ill. Adm. Code 702.149)

13. MONITORING AND RECORDS. (35 Ill. Adm. Code 702.150)

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste must be the appropriate method from Appendix A of 35 Ill. Adm. Code 721. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, latest versions; Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, latest versions; or an equivalent method as specified in the approved Waste Analysis Plan.

b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report or application. These periods may be extended by request of the Illinois EPA at any time. The permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well.

c. Records of monitoring information shall include:

i. The date(s), exact place, and time of sampling or measurements;

ii. The individual(s) who performed the sampling or measurements;

iii. The date(s) analyses were performed;

iv. The individual(s) who performed the analyses;

v. The analytical technique(s) or method(s) used; and

vi. The result(s) of such analyses. (35 Ill. Adm. Code 702.150)

14. REPORTING PLANNED CHANGES. The permittee shall give written notice to the Illinois EPA as soon as possible of any planned physical alterations or additions to the permitted facility. In general, proposed changes to the facility will need to be submitted to the Illinois EPA as permit modification request that complies with the requirements of 35 Ill. Adm. Code 703.280. (35 Ill. Adm. Codes 702.152(a))

15. CONSTRUCTION CERTIFICATION. For a new hazardous waste management facility, the permittee shall not commence treatment, storage or disposal of hazardous waste; and for a facility being modified the permittee shall not treat, store or dispose of hazardous waste in the modified portion of the facility, until:

a. The permittee has submitted to the Illinois EPA by certified mail or hand delivery a letter signed by the permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the permit; and

b. 1. The Illinois EPA has inspected the modified or newly constructed facility and finds it is in compliance with the condition of the permit; or

2. If, within 15 days of the date of submission of the letter in paragraph (a), the permittee has not received notice from the Illinois EPA of its intent to inspect, prior inspection is waived and the permittee may commence treatment, storage or disposal of hazardous waste. (35 Ill. Adm. Code 703.247)

16. ANTICIPATED NONCOMPLIANCE. The Permittee shall give advanced written notice to the Illinois EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements, regulations, or the Act. (35 Ill. Adm. Code 702.152(b))

17. TRANSFER OF PERMITS. This permit may not be transferred by the permittee to a new owner or operator unless the permit has been modified or reissued pursuant to 35 Ill. Adm. Code 703.260(b) or 703.272. Changes in the ownership or operational control of a facility must be made as a Class 1 modification with the prior written approval of the Illinois EPA. The new owner or operator shall submit a revised permit application no later than 90 days prior to the scheduled change. (35 Ill. Adm. Code 703.260)

18. MONITORING REPORTS. Monitoring results shall be reported at the intervals specified in the permit. (35 Ill. Adm. Code 702.152(d))

19. COMPLIANCE SCHEDULES. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than specified in 35 Ill. Adm. Code 702.162. (35 Ill. Adm. Code 702.152(e))

20. TWENTY-FOUR HOUR REPORTING.

a. The Permittee shall report to the Illinois EPA any noncompliance with the permit which may endanger health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the following circumstances. This report shall include the following:

i. Information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies.

ii. Information concerning the release or discharge of any hazardous waste or of a fire or explosion at the HWM facility, which could threaten the environment or human health outside the facility.

b. The description of the occurrence and its cause shall include:

i. Name, address, and telephone number of the owner or operator;

ii. Name, address, and telephone number of the facility;

iii. Date, time, and type of incident;

iv. Name and quantity of material(s) involved;

v. The extent of injuries, if any;

vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where applicable; and

vii. Estimated quantity and disposition of recovered material that resulted from the incident.

c. A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Illinois EPA may waive the five day written notice requirement in favor of a written report within fifteen days. (35 Ill. Adm. Code 702.152(f) and 703.245(b))

21. OTHER NONCOMPLIANCE. The Permittee shall report all instances of noncompliance not otherwise required to be reported under Standard Conditions 14, 15, and 16, at the time monitoring reports, as required by this permit, are submitted. The reports shall contain the information listed in Standard Condition 20. (35 Ill. Adm. Code 702.152(g))

22. OTHER INFORMATION. Where the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Illinois EPA, the Permittee shall promptly submit such facts or information. (35 Ill. Adm. Code 702.152(h))

23. SUBMITTAL OF REPORTS OR OTHER INFORMATION. All written reports or other written information required to be submitted by the terms of this permit shall be sent to:

Illinois Environmental Protection Agency
Bureau of Land
Planning and Reporting Section - #24
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

24. SIGNATORY REQUIREMENT. All permit applications, reports or information submitted to the Illinois EPA shall be signed and certified as required by 35 Ill. Adm. Code 702.126. (35 Ill. Adm. Code 702.151)

25. CONFIDENTIAL INFORMATION. Any claim of confidentiality must be asserted in accordance with 35 Ill. Adm. Code 702.103 and 35 Ill. Adm. Code 161.

26. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE. The Permittee shall maintain at the facility, until post-closure is complete, the following documents and amendments, revisions and modifications to these documents:

a. Post-closure plan as required by 35 Ill. Adm. Code 724.218(a) and this permit.

b. Cost estimate for post-closure care as required by 35 Ill. Adm. Code 724.244(d) and this permit.

c. Operating record as required by 35 Ill. Adm. Code 724.173 and this permit.

d. Inspection schedules as required by 35 Ill. Adm. Code 724.115(b) and this permit.

GENERAL FACILITY STANDARDS

27. GENERATOR REQUIREMENTS. Any hazardous waste generated at this facility shall be managed in accordance with the generator requirements at 35 Ill. Adm. Code Part 722.

28. SECURITY. The Permittee shall comply with the security provisions of 35 Ill. Adm. Code 724.114(b) and (c).

29. GENERAL INSPECTION REQUIREMENTS. The Permittee shall follow the approved inspection schedule. The Permittee shall remedy any deterioration or malfunction discovered by an inspection as required by 35 Ill. Adm. Code 724.115(c). Records of inspections shall be kept as required by 35 Ill. Adm. Code 724.115(d).

PREPAREDNESS AND PREVENTION

30. DESIGN AND OPERATION OF FACILITY. The Permittee shall maintain and operate the facility to minimize the possibility of fire, explosion, or any unplanned sudden or

non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. (35 Ill. Adm. Code 724.131)

RECORD KEEPING

31. OPERATING RECORD. The Permittee shall maintain a written operating record at the facility in accordance with 35 Ill. Adm. Code 724.173.

POST-CLOSURE

32. CARE AND USE OF PROPERTY. The Permittee shall provide post-closure care for the facility as required by 35 Ill. Adm. Code 724.217 and in accordance with the approved post-closure plan.

33. AMENDMENT TO POST-CLOSURE PLAN. The Permittee must amend the post-closure plan whenever a change in the facility operation plans or facility design affects the post-closure plan or when an unexpected event has occurred which has affected the post-closure plan pursuant to 35 Ill. Adm. Code 724.218(d).

34. COST ESTIMATE FOR POST-CLOSURE. The Permittee's original post-closure cost estimate, prepared in accordance with 35 Ill. Adm. Code 724.244, must be:

    a. Adjusted for inflation either 60 days prior to each anniversary of the date on which the first closure cost estimate was prepared or if using the financial test or corporate guarantee, within 30 days after close of the firm's fiscal year.

    b. Revised whenever there is a change in the facility's post-closure plan increasing the cost of closure.

    c. Kept on record at the facility and updated. (35 Ill. Adm. Code 724.244)

35. FINANCIAL ASSURANCE FOR POST-CLOSURE CARE. The Permittee shall demonstrate compliance with 35 Ill. Adm. Code 724.245 by providing documentation of financial assurance, as required by 35 Ill. Adm. Code 724.251, in at least the amount of the cost estimates required by the previous Permit Condition. Changes in financial assurance mechanisms must be approved by the Agency pursuant to 35 Ill. Adm. Code 724.245.

    Financial assurance documents submitted to Illinois EPA should be directed to the following address:

Illinois Environmental Protection Agency
Bureau of Land #24
Financial Assurance Program
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

36. INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS. The Permittee shall comply with 35 Ill. Adm. Code 724.248 whenever necessary.

SECTION VIII - SPECIAL CONDITIONS

1. The permittee is required to complete and provide the following 39i Certification forms to the Illinois EPA Bureau of Land:

   a. A 39i (legal entity) certification form must be filled out for the legal entity (i.e. Company) that appears on the permit application being submitted, and

   b. A 39i (individual) form must be filled out for the individual that signs the 39i (legal entity) certification form, and

   c. A 39i (individual) form must be filled out for each individual who signs the permit application.

   Note: If the applicant wants additional staff to be able to send in future modifications, certifications, etc. those individuals should also send in an individual 39i certification form.

2. The permittee shall submit the necessary 39i certification form(s) and supporting documentation within 30 days of the effective date of this permit and thereafter within 30 days of any of the following events:

   a. The owner or operator, or officer of the owner or operator, or any employee who has control over operating decisions regarding the facility has violated federal, State, or local laws, regulations, standards, or ordinances in the operation of waste management facilities or sites; or

   b. The owner or operator, or officer of the owner or operator, or any employee who has control over operating decisions regarding the facility has been convicted in this or another State of any crime which is a felony under the laws of this State, or conviction of a felony in a federal court; or

   c. The owner or operator, or officer of the owner or operator, or any employee who has control over operating decisions regarding the facility has committed an act of gross carelessness or incompetence in handling, storing, processing, transporting, or disposing of waste.

   d. A new person is associated with the owner or operator who can sign the permit application or who has control over operating decisions regarding the facility, such as a corporate officer or a delegated employee.

   The 39i certification must describe the violation(s), convictions, carelessness, or incompetence as outlined in (a), (b), or (c) above and must include the date that a new person as described in (d) above began employment with the applicant.

The 39i certification form and supporting documentation shall be submitted to the address specified below:

Illinois Environmental Protection Agency
Bureau of Land #33 – 39i Certification
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

[The 39i certification forms will be treated as confidential by the Agency. The applicant may also request the information on the 39i certification form be maintained confidential in accordance with 2 IAC 1828.]

3. Within 60 days of the effective date of this permit, the permittee shall provide revised figures (and legal description if necessary) of the property that consistently identify the property line south of the LTF as a Class 1* permit modification.

4. Within 60 days of the effective date of this permit CITGO shall submit a closure plan for the LTF as a Class 1* permit modification. This submittal shall include a properly completed IEPA permit application form LPC-PA23. The PA23 Form must be signed and sealed by a qualified Professional Engineer registered in the State of Illinois and the owner/operator must check the box identifying the appropriate certification statement.

The closure plan shall describe how the permittee will address following specific requirements for the closure of land treatment units:

a. Continue all operations (including pH control) necessary to maximize degradation, transformation, or immobilization of hazardous constituents within the treatment zone, as required under Section 724.373(a), except to the extent such measures are inconsistent with 35 IAC 724.380(a)(8);

b. Continue all operations in the treatment zone to minimize run-off of hazardous constituents, as required under Section 724.373(b);

c. Maintain the run-on control system required under Section 724.373(c);

d. Maintain the run-off management system required under Section 724.373(d);

e. Control wind dispersal of hazardous waste if required under Section 724.373(f);

f. Continue to comply with any prohibitions or conditions concerning growth of food-chain crops under Section 724.376;

g. Continue unsaturated zone monitoring in compliance with Section 724.378 (except soil-pore liquid monitoring is not required),

h. Establish a vegetative cover on the portion of the facility being closed at such time that the cover will not substantially impede degradation, transformation, or immobilization of hazardous constituents in the treatment zone. The vegetative cover must be capable of maintaining growth without extensive maintenance.

i. The horizontal extent of the land treatment areas indicated on drawings in the closure plan must include those locations where hazardous constituents were found at statistically significant concentrations over background. At a minimum this includes the following perimeter sample (PS) locations identified in the 1995 Site Characterization Report as: LAI-4PS, LAI-12PS, LAI-15PS, LAII-4PS, LAII-5PS, LAII-11PS, LAII-15PS, LAII-17PS, LAIII-1PS, LAIII-3PS, LAIV-3PS, LAI-4PSA, and LAI-12PSA.

5. The closure plan required in Condition VIII.4 shall include:

   a. A schedule for closure of the land treatment areas.

   b. A revised cost estimate for closure of the land treatment areas. The cost estimate must be provided in current (2010) dollars.

   c. Financial assurance that meets the requirements of 35 IAC Part 724 Subpart H in the amount of the revised closure cost estimate.

6. The closure plan required in Condition VIII.4 shall include the following in support of its demonstration of how closure of the LTF will meet the requirements for run-on and run-off control systems required by of 35 IAC 724.380(a)(3) and (a)(4):

   a. Detailed engineering drawings similar to Figures 131-CD-444 & 445 in Appendix I.1 of the application that show final contours of the four areas in the LTF and drainage control structures (berms, ditches, rip/rap, concrete pipe, etc.) are capable of meeting the regulations. The use of silt fences is not considered acceptable for long term management of run-on and run-off from the LTF.

   b. Calculations demonstrating the drainage control structures shown in the engineering drawings are capable of handling the precipitation of a 24 hr 25 year storm event (i.e. 6 inches of rain) without being eroded or otherwise damaged. These calculations need to include the maximum velocity(s) the water will reach in the drainage ditches and a demonstration that this velocity will not erode or otherwise damage the drainage ditches.

   c. Provisions for addressing the piles of sediments from the Stormwater basin that are currently located on Area I. If CITGO intends to use this material as fill in another area in the LTF, this location must be specified on scale drawings.

   d. The specifications for the types of grasses that will be used to form the vegetative cover on the land treatment areas.

7. Within 60 days of the effective date of this permit, the permittee shall provide financial assurance for the amount of the closure cost and liability insurance specified in Section III of the permit. The amount of financial assurance specified in this condition must be in current (2010) values. The financial assurance documents must be on the forms approved by Illinois EPA and meet the requirements of 35 Ill. Adm Code 724 Subpart H. This revision to the permit shall be considered a Class 1* permit modification.

8. Within 60 days of the effective date of this permit, the permittee shall provide a revised post-closure cost estimate that includes 1) the cost for abandonment of piezometers and groundwater monitoring wells associated with the LTF, 2) updates the unit costs to current 2010 prices, 3) calculate the post-closure cost estimate by multiplying the annual cost by the number of years of post-closure as required by 35 IAC 724.244(a)(2). These revisions will be considered a Class 1* permit modification.

SECTION IX: REPORTING AND NOTIFICATION REQUIREMENTS

The reporting and notification requirements of each section of the RCRA permit are summarized below. This summary is provided to highlight the various reporting and notification requirements of this permit.

Condition	Submittal	Due Date
III. RCRA CLOSURE		
III.E.2	File survey plat with County Recorder that records the type, location, and quantity of hazardous waste disposed within each area.	No later than the date the certification of closure of the LTF is submitted to the Illinois EPA
III.E.4	Closure certification report that the LTF has been closed in accordance with the approved permit application and conditions of permit.	Within 60 days after closure is complete.
III.E.4a	Class 1* permit modification requesting to delete those conditions not associated with post-closure care.	Within 60 days after closure is complete.
III.E.4c	Documentation that survey plat was filed with County recorder.	Within 60 days after closure is complete.
III.E.4c	Documentation that the permittee has recorded notation on the deed to the facility property regarding hazardous waste management at the site.	Within 60 days after closure is complete.
IV. POST-CLOSURE CARE		
IV.D.7	Submit the results of each annual soil sampling event to IEPA.	By January 15 of each year.
IV.D.9	Notify the Illinois EPA that there is a statistically significant increase (SSI) of hazardous constituents below the treatment zone in the LTF.	Within 7 days of finding an SSI.
IV.D.9	Apply for a permit modification to modify the post-closure practices.	Within 90 days of finding an SSI.

Condition	Submittal	Due Date
IV.F.2	Certification that the post-closure care for the LTF was performed in accordance with the specifications in the approved Post-closure Plan.	Within 60 days after post-closure care is complete.
V. GROUNDWATER DETECTION MONITORING		
J.2	Groundwater monitoring data and statistical calculations required semi-annually. Samples Collected During Preceding Months of: April – June October – December	 Results due to IEPA by: July 15 January 15
J.3	Groundwater Surface Elevation	Semi-Annually
J.4	Groundwater flow rate and direction.	Annually with groundwater data due July 15
J.5	Surveyed Elevation	Every 5 years or at the request of IEPA, or whenever the elevation changes. In addition, for new wells, at the time of installation
J.6	Elevation of the bottom of each well.	Every year due July 15
J.10.a	Notify Illinois EPA in writing of statistically significant increase	Within 7 days after discovery of increase.
J.10.b	Sample groundwater in all wells for Appendix I constituents.	Immediately after increase is discovered.
J.10.d	Apply for permit modification establishing compliance monitoring program.	Within 90 days after discovery of increase.
J.10.e	Provide Illinois EPA with corrective action feasibility plan.	Within 180 days after discovery of increase.
J.11.a	Notify the Illinois EPA in writing of intent to make demonstration	Within 7 days the increase was discovered.

Condition	Submittal	Due Date
J.11.b	Submit a report to Illinois EPA which demonstrates than a source other than a regulated unit caused the increase, or resulted from error.	Within 90 days the increase was discovered.
J.11.c	Submit to the Illinois EPA application to change detection monitoring program.	Within 90 days the increase was discovered.
VI. CORRECTIVE ACTION		
B.6	Phase I/II RFI Report	To be specified in the Phase I/II workplan, subject to Illinois EPA approval.
B.7	Phase II Workplan	Within 90 days of notification that Phase II is required.
B.7	Supplemental Investigation workplan	Within 90 days of notification that supplemental investigation is required
C	Phase I CMP Report	Within 120 days of receiving notification that corrective measures are necessary
D	Annual Sewer Inspection and Maintenance Report	March 31 of each following year
E.1	Updated Corrective Action Cost Estimate	Within 120 days of the of the effective date of this permit
E.1	Revised Cost estimate (with the initial submittal of each RFI Report and/or CMP Report).	Upon written Illinois EPA request
G.1	Notification of Newly Discovered SWMU	Within 60 days after discovery.
G.3	Assessment Plan for Newly Discovered SWMU.	Within 120 days of Illinois EPA's request.

Condition	Submittal	Due Date
G.4	Implementation of Assessment for Newly Discovered SWMU.	Within 60 days of approval of plan or by date specified by Illinois EPA.
VII. STANDARD CONDITIONS FOR POST-CLOSURE		
6	Complete application for new permit.	At least 180 days prior to permit expiration.
11	Information requested by Illinois EPA and copies of records required to be kept by this permit.	Reasonable time.
14	Notify Illinois EPA of planned physical alterations or additions.	At least 15 days prior to planned change.
15	Construction certification signed by permittee and P.E.	Prior to managing waste in a new or modified portion of the facility.
16	Notification of anticipated noncompliance.	Prior to modification or action.
17	Application for permit modification indicating permit is to be transferred.	90 days prior to the scheduled change
19	Submission of any information required in a compliance schedule.	Within 14 days after each schedule date.
20	Report to Illinois EPA any non-compliance which may endanger health or environment. telephone in writing	 Within 24 hours after discovery. Within 5 days after discovery.
21	Report all other instances of noncompliance.	March 1 of each year along with Annual Report.
35	Provide documentation of financial assurance as	Annually, or when cost

Condition	Submittal	Due Date
	required by 35 Ill. Adm. Code 724.251	estimate changes
36	Notify Illinois EPA of commencement of voluntary or involuntary bankruptcy proceedings.	Within 10 days after commencement of proceeding.
VIII. SPECIAL CONDITIONS		
2	39i Certification Forms	Within 30 days of the effective date of this permit and within 30 days of events specified in permit.
3	Revised figures (and legal description if necessary) of the property that consistently identify the property line as a Class 1* permit modification.	Within 60 days of the effective date of this permit
4	Closure plan for the land treatment facility (LTF) as a Class 1* permit modification.	Within 60 days of the effective date of this permit
7	Financial assurance for the amount of the closure cost and liability insurance specified in Section III of the permit.	Within 60 days of the effective date of this permit
8	Revised post-closure cost estimate	Within 60 days of the effective date of this permit
ATTACHMENT C-1: SCOPE OF WORK FOR RFI		
V	Completion of Group 1 or 2 RFI Phase I/II investigation and submission of report	Within time frame established in the Phase I/II Workplan, subject to Illinois EPA's approval.
	Submission of RFI Phase II Workplans	Within 90 days of notification that Phase II is required.
	Completion of RFI Phase II investigation and submission of Phase II Report	Within time frame established in the Phase II workplan subject to Illinois EPA's approval.

Condition	Submittal	Due Date
	Submission of Supplemental Investigation Workplan	Within 90 days of notification that supplemental investigation is required.
	Completion of supplemental Investigation and Submission of Report and Summary	To be specified in the supplemental investigation workplan subject to approval by Illinois EPA.
	Annual RCRA Sewer Inspection and Maintenance Report	March 31 of each following
	Corrective Action Progress Report	Upon request and to be specified by Illinois EPA.
ATTACHMENT D: CORRECTIVE MEASURES PROGRAM REQUIREMENTS		
3.0	Conceptual Design Report	Within 90 days of approval of the Phase II CMP Report
4.0	Final Design Report	Within 120 days of approval of the Conceptual Design Report or as otherwise specified by the Illinois EPA
5.0	Construction Progress Reports	Quarterly during the construction/installation of the corrective measures
	Construction Report	To be specified in the Final Design Report
	Operation and Maintenance Plan	To be specified in the Final Design Report
6.0	Periodic Operations and Maintenance Progress Reports	To be specified in the Operation and Maintenance Plan.

CITGO Lemont Refinery

Renewal RCRA Hazardous Waste Permit

USEPA ID No: ILD041550567
STATE ID No: 1978030004
Log No: B-162R

ATTACHMENT A

CLOSURE CERTIFICATION FORM

CITGO Lemont Refinery
RCRA Log No. B-162R

This certification is to be completed by both the responsible officer and by the qualified Professional Engineer registered in Illinois upon completion of closure.
Submit one copy of the certification with original signatures and three additional copies.

Closure Certification

The four areas in the hazardous waste Land Treatment Facility (D81) at the CITGO Lemont Refinery in Lemont, Illinois have been closed in accordance with the Agency approved closure plan.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

USEPA ID Number	Facility Name
Signature of Owner	Printed Name and Title
Signature of Operator	Printed Name and Title
Signature of P.E.	Printed Name of P.E. and Illinois Registration Number
Date	P.E. Seal and Expiration Date of License

CITGO Lemont Refinery

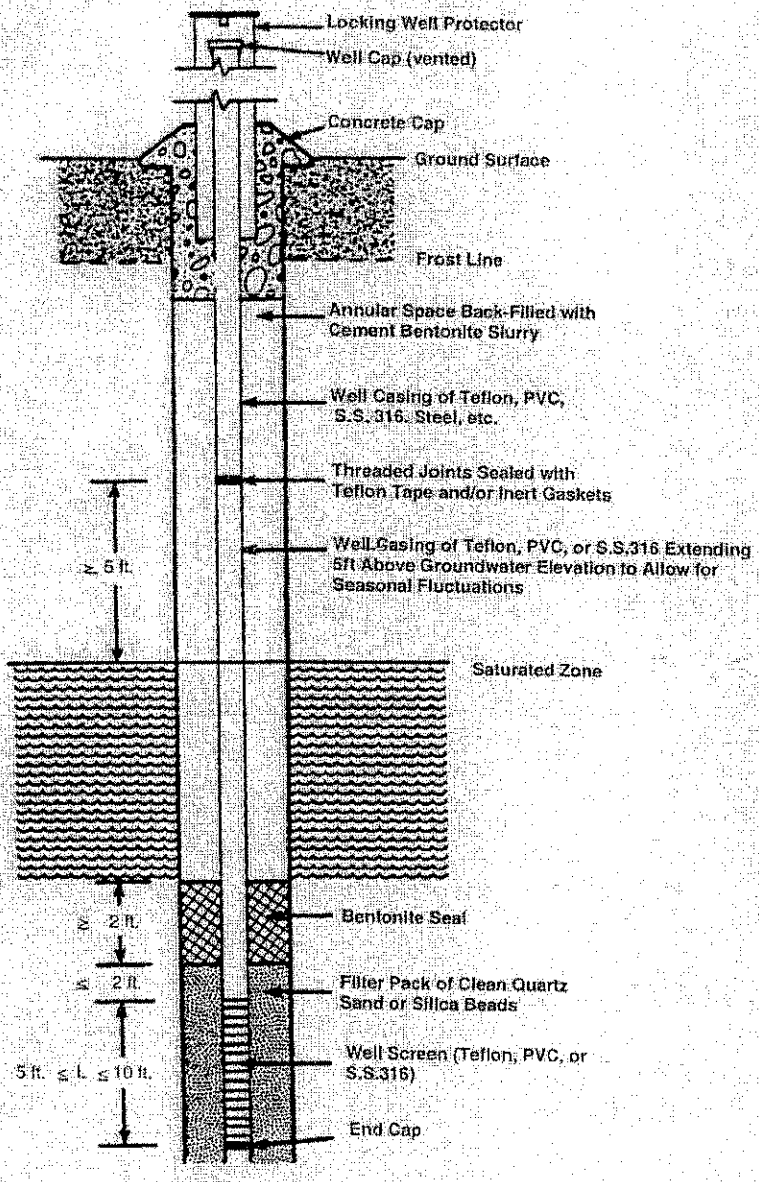
Renewal RCRA Hazardous Waste Permit

USEPA ID No: ILD041550567
STATE ID No: 1978030004
Log No: B-162R

ATTACHMENT B

GROUNDWATER MONITORING ATTACHMENTS

Monitoring Well Diagram



Illinois Environmental Protection Agency

Field Boring Log Page ____ of ____

Site ID No. _____ Federal ID No. _____

Site Name: _____

Quadrangle: _____ Sec. _____ T. _____ R. _____

UTM (or State Plane) Coord. N. (X) _____ E. (Y) _____

Latitude: ° ' " Longitude: ° ' "

Boring Location: _____

Drilling Equipment: _____

County: _____

Boring No. _____ Monitoring Well No. _____

Surface Elevation: _____ Completion Depth: _____

Auger Depth: _____ Rotary Depth: _____

Date: Start: _____ Finish: _____

Elev.	Description of Material	Graphic Log	Depth In Feet	SAMPLES: Sample No.	Sample Type	Sample Recovery (X)	Penetrometer	N Values (Blow Counts)	OVA or HNU Readings	Personnel: G - D - H - H - / REMARKS

Illinois Environmental Protection Agency **Well Completion Report**

Site Number: _____ County: _____

Site Name: _____ Well #: _____

State Plane Coordinate: X _____ Y _____ (or) Latitude: ___ ___ ___ Longitude: ___ ___ ___ Borehole #: _____

Surveyed by: _____ IL Registration #: _____

Drilling Contractor: _____ Driller: _____

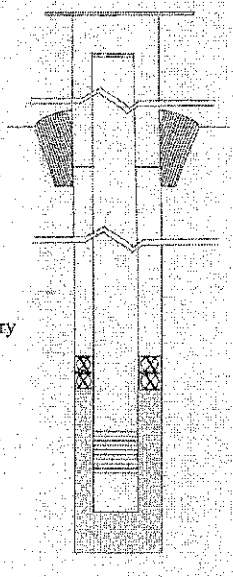
Consulting Firm: _____ Geologist: _____

Drilling Method: _____ Drilling Fluid (Type): _____

Logged By: _____ Date Started: _____ Date Finished: _____

Report Form Completed By: _____ Date: _____

ANNULAR SPACE DETAILS



Type of Surface Seal: _____

Type of Annular Sealant: _____

Installation Method: _____

Setting Time: _____

Type of Bentonite Seal - - Granular, Pellet, Slurry
(Choose One)

Installation Method: _____

Setting Time: _____

Type of Sand Pack: _____

Grain Size: _____ (Sieve Size)

Installation Method: _____

Type of Backfill Material: _____
(if applicable)

Installation Method: _____

	Elevations (MSL)*	Depths (BGS)	(.01ft.)
	_____	_____	Top of Protective Casing
	_____	_____	Top of Riser Pipe
	_____	_____	Ground Surface
	_____	_____	Top of Annular Sealant
	_____	_____	Static Water Level (After Completion)
	_____	_____	Top of Seal
	_____	_____	Top of Sand Pack
	_____	_____	Top of Screen
	_____	_____	Bottom of Screen
	_____	_____	Bottom of Well
	_____	_____	Bottom of Borehole

* Referenced to a National Geodetic Datum

WELL CONSTRUCTION MATERIAL
(Choose one type of material for each area)

Protective Casing	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Above W.T.	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Below W.T.	SS304, SS316, PTFE, PVC, or Other
Screen	SS304, SS316, PTFE, PVC, or Other

CASING MEASURMENTS

Diameter of Borehole (inches)	
ID of Riser Pipe (inches)	
Protective Casing Length (feet)	
Riser Pipe Length (feet)	
Bottom of Screen to End Cap (feet)	
Screen Length (1" slot to last slot) (feet)	
Total Length of Casing (feet)	
Screen Slot Size **	

**Hand-Slotted Well Screens are Unacceptable

Well Completion Form (revised 02/06/02)

ILLINOIS EPA MONITOR WELL PLUGGING AND ABANDONMENT PROCEDURES

	Well Construction		Plugging Procedure
I. Unconsolidated Sediment Wells:	I-A	...if backfilled with cement grout above bentonite seal and/or sandpack:	1. Cut casing off at desired depth. 2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 3. Insert tremi pipe (1" i.d. pvc) into well and extend to bottom. 4. Slowly pump slurry under low pressure through temi pipe. 5. Slowly withdraw tremi pipe - making sure bottom of pipe remains below pure slurry. 6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.
	I-B	...if backfilled with soft sediments (cuttings) above bentonite seal and/or sandpack:	1. Knock out and remove thin surface concrete plug, if present. 2. Re-auger entire length of well. 3. Remove well casing from re-augured borehole. 4. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 5. Insert tremi pipe (1" i.d. pvc) into augers and extend to bottom. 6. Slowly pump slurry under low pressure through tremi pipe. 7. Continue slow pumping until all formation water and the water slurry mix is displaced from top of casing. 8. Slowly withdraw tremi pipe - making sure bottom of pipe remains below pure slurry. 9. Pull a flight of augers (5" if in unstable materials and hole collapse is likely or 10" if in competent material and collapse is unlikely). 10. Top off cement slurry after each flight is removed.
	I-C	...if monitor well construciton is unknown:	1. Follow procedures in I-A.
II. Bedrock Wells:	II-A	...All bedrock monitor wells:	1. Cut casing off at desired depth. 2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 3. Insert tremi-pipe (1" i.d. pvc) into well and extend to bottom. 4. Slowly pump slurry under low pressure through tremi pipe. 5. Slowly withdraw pipe making sure bottom of pipe remains below pure slurry. 6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.

Well Plugging Procedures (revised 02/06/02)

Formatting Requirements for the 01 Record of the Electronically Submitted Groundwater and Leachate Data (the 01 Record portion of the LPC-160 is included for example purposes)

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM

Page 1 of _____

RECORD CODE: L P C S M 0 1 (1–7) TRANS CODE: A (8)

REPORT DUE DATE ___/___/___ (36 M D Y 41)

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER _____ (9–15)

MONITOR POINT NUMBER _____ (see Instructions) (19–22)

REGION _____ CO. _____

DATE COLLECTED ___/___/___ (23 M D Y 25)

FACILITY NAME _____

FOR IEPA USE ONLY

LAB _____ (29)

DATE RECEIVED ___/___/___ (42 M D Y 47)

BACKGROUND SAMPLE (X) _____ (54)

TIME COLLECTED (24 Hr. Clock) ___:___ (55 H M 58)

UNABLE TO COLLECT SAMPLE _____ (see Instructions) (59)

MONITOR POINT SAMPLED BY _____ (60) OTHER (SPECIFY) _____

SAMPLE FIELD FILTERED — INORGANICS (X) _____ (61) ORGANICS (X) _____ (62)

SAMPLE APPEARANCE _____ (63–102)

COLLECTOR COMMENTS _____ (103–142)

LAB COMMENTS _____ (150–199)

IL 532 1213
LPC 160 01/90

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 ½, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $25,000 for each day the failure continues a fine up to $1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

*Only Keypunch with Data in Column 35 or Columns 38-47

Formatting Requirements for the 01 Record of the Electronically Submitted Groundwater and Leachate Data (the 01 Record portion of the LPC-160 is included for example purposes)

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM

Page 1 of _____

RECORD CODE: L P C S M 0 1 (1–7) TRANS CODE: A (8)

REPORT DUE DATE ___/___/___ (36 M D Y 41)

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER _____ (9–18)

MONITOR POINT NUMBER _____ (see Instructions) (19–21)

REGION _____ CO. _____

DATE COLLECTED ___/___/___ (22 M D Y 28)

FACILITY NAME _____

FOR IEPA USE ONLY

LAB _____ (29)

DATE RECEIVED ___/___/___ (42 M D Y 47)

BACKGROUND SAMPLE (X) _____ (54)

TIME COLLECTED _____ (24 Hr. Clock) (55 H M 58)

UNABLE TO COLLECT SAMPLE _____ (see Instructions) (59)

MONITOR POINT SAMPLED BY _____ (60) OTHER (SPECIFY) _____

SAMPLE FIELD FILTERED — INORGANICS (X) _____ (61) ORGANICS (X) _____ (62)

SAMPLE APPEARANCE _____ (63–102)

COLLECTOR COMMENTS _____ (103–142)

LAB COMMENTS _____ (150–199)

IL 532 1213
LPC-160 01/90

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 ½, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $25,000 for each day the failure continues a fine up to $1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

*Only Keypunch with Data in Column 35 or Columns 38-47

KEY:

Spaces Numbered	Description	Format
Spaces 1-7	Record Code	LPCSM01
Space 8	Trans Code	A
Spaces 9-18	Site ID	0000000000
Spaces 19-22	Mon Pt ID	G000
Spaces 23-28	Date Collected	000000
Space 29	Lab	
Spaces 30-35	Filler	
Spaces 36-41	Report Due Date	000000
Spaces 42-47	Date Received	000000
Spaces 48-53	Filler 2	
Space 54	Background Sample	
Spaces 55-58	Time Collected	0000
Space 59	Unable to Collect Sample	
Space 60	Monitoring Point Sampled By	
Space 61	Field Filtered – Inorganic	
Space 62	Field Filtered – Organic	
Spaces 63-102	Sample Appearance	
Spaces 103-142	Collector Comments	
Spaces 143-149	Filler 3	
Spaces 150-199	Lab Comments	

Formatting Requirements for the 02 Record of the Electronically Submitted Groundwater and Leachate Data (the 02 Record portion of the LPC-160 is included for example purposes)

RECORD CODE | L | P | C | S | M | 0 | 2 | (Columns 1-7) TRANS CODE | A | (Column 8) (COLUMNS 9-29 FROM ABOVE)

	FIELD MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER (Columns 30-34)	Remarks See Inst. (Column 35)	Replicate (Column 36)	< or > (Column 37)	VALUE (Columns 38-47)
Q	TEMP OF WATER (unfiltered °F)	00011				
Q	SPEC COND (unfiltered umhos)	00094				
Q	pH (unfilted units)	00400				
Q	ELEV OF GW SURF (ft ref MSL)	71993				
Q	DEPTH OF WATER (ft below LS)	72019				
A	BTM WELL ELEV (ft ref MSL)	72020				
Q	DEPTH TO WATER FR MEA PT (ft)	72109				

IL 532 1213
LPC 160 01/90

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 ½, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $25,000 for each day the failure continues a fine up to $1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

***Only Keypunch with Data in Column 35 or Columns 38-47**

KEY:

Spaces Numbered	Description	Format
Spaces 1-7	Record Code	LPCSM02
Space 8	Trans Code	A
Spaces 9-18	Site ID	0000000000
Spaces 19-22	Mon Pt ID	
Spaces 23-28	Date Collected	
Space 29	Lab	
Spaces 30-34	STORET Number	
Space 35	Remarks	
Space 36	Replicate	
Space 37	< or >	
Space 38-47	Value	

CITGO Lemont Refinery

Renewal RCRA Hazardous Waste Permit

USEPA ID No: ILD041550567
STATE ID No: 1978030004
Log No: B-162R

ATTACHMENT C-1

Scope of Work for a RCRA Facility Investigation

Attachment C-1
Scope of Work for a RCRA Facility Investigation

I. PURPOSE

The purpose of the RFI is to determine the nature and extent of releases of hazardous waste or hazardous constituents, if any, from SWMUs located at CITGO and to gather data necessary to develop and implement a Corrective Measures Program (CMP). Specifically, the information gathered during the RFI will be used to help determine the need, scope and design of any corrective or interim actions, including the corrective measures program.

II. SCOPE OF WORK

The Scope of Work for the RFI is to evaluate whether a release has occurred, and to what extent, from the two groups of SWMUs listed in Section IV of the Permit. The scope for the Group 1 and Group 2 SWMUs is divided into two phases - Phases I and II.

1. The purpose of Phase I is to provide information on the characteristics and integrity of each unit and conduct field activities, as necessary, to determine if various SWMUs at that facility have released, are currently releasing, or have the potential to release hazardous waste and/or hazardous constituents to the soil and/or surface water.

2. Phase II of the RFI will be required if the Illinois EPA's BOL determines from the data obtained in Phase I that for any SWMU (1) a release has occurred to the soil, groundwater, and/or surface water, or (2) a release is occurring to the soil, groundwater, and/or surface water. The purpose of Phase II is to define the nature and extent of releases to any affected media including soil, groundwater, and/or surface water.

3. Supplemental investigation may be required if the Illinois EPA's BOL determines from the data obtained in Phase I or Phase II that the nature and extent of hazardous wastes or hazardous constituents has not been adequately characterized in any environmental media including soil, groundwater, or surface water and sediments.

Each phase of the investigation is divided into three subparts. The first subpart deals with the development of a RFI Workplan by the Permittee. The second subpart is the implementation of the RFI. The final subpart covers the submission of reports of activities and results of the RFI.

III. RFI WORKPLANS

CITGO shall prepare detailed workplans that address each phase of the RFI which are reviewed and approved by the Illinois EPA prior to conducting that phase of the RFI. Separate plans will be prepared for the Group 1 and Group 2 SWMUs. The workplan for each phase of the RFI must,

at a minimum, contain the information identified in III.A-III.I below. The information in the workplan must be presented in a manner which is similar to the format set forth in these sections. Information provided in each Phase of the RFI may be incorporated into the workplan for the subsequent Phase by reference. Information already submitted in the Part B permit application may also be incorporated by reference into the workplans when appropriate.

The following sections describe what is required in the RFI Workplans for Phase I and Phase II investigations. These phases can be combined into one workplan provided that the requirements of each phase are met.

A. INTRODUCTION (required for all workplans)

A general discussion of the contents and goals of each workplan must be provided as an introductory portion of the workplan. This introduction should also discuss, in general, the facility and the SWMUs being investigated.

B. ADMINISTRATIVE OUTLINE

CITGO shall submit as part of the workplan for each phase of the RFI a general outline defining the RFI objectives, technical approach, and scheduling of tasks during that phase of the RFI. CITGO shall prepare a Project Management Plan (PMP) as part of each Phase Workplan which will include a discussion of the technical approach, schedules, budget, and personnel. The Project Management Plan must also include a description of the qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the current Phase of the RFI. The PMP from previous phases can be incorporated by reference into the current workplan provided that any changes or additions to the existing PMP are detailed in a PMP addendum contained within the workplan.

C. RFI APPROACH

Each workplan must describe the investigative approach for the phase and group of SWMUs being investigated under the workplan. The information required includes:

1. The parameters and analytical methods to be used to establish the presence or absence of contamination and define the nature and extent of known releases. These must include, but are not limited to, specific hazardous constituents of wastes known or suspected to have been managed by the SWMUs as identified and determined by the unit characterization information presented in the workplan.

2. The basis for selecting the parameters and methods in (1) above.

3. The methodology for choosing sampling locations, depths, and numbers of samples.

4. The methodology for investigating the hydrostatigraphic units at site, and the locations and depths for each monitor well, as appropriate.

5. The sample collection procedures for each parameter or constituent to be analyzed for each environmental media (soil, sediments, surface water, and groundwater). The following should be considered in developing these procedures:

   a. Sample collection methods and equipment should follow guidance in Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, Third Edition (SW-846) including Final Update 1 and any promulgated updates, where appropriate.

   b. Field sampling methods not included in SW-846 must be approved by IEPA before they are used in the RFI. This includes methods such as drilling, borings, etc. When available, standards procedures, as defined by USEPA, IEPA, or ASTM, should be followed.

   c. Soil and sediment samples collected for volatile organics analysis require specialized sampling and handling procedures, as specified in the Illinois EPA's volatile organic compound (VOC) sampling procedure. Unless extenuating circumstances dictate otherwise, soil samples collected for volatile organic analysis should not be mixed, composited, or otherwise aerated. If extenuating circumstances prevail, then procedures must be made to minimize (1) the time the sample is exposed to the air; (2) aeration of the sample; and (3) agitation of the sample.

   d. If a drill rig or other piece of equipment is necessary to collect soil samples:

      (1) The procedures specified in ASTM Method D-1586 (Split Spoon Sampling) or D-1587 (Shelby Tube Sampling) must be used in collecting the samples;

      (2) Soil samples should be collected continuously at specified locations to provide information regarding the shallow geology of the area where the investigation is being conducted.

   e. Soil and sediments encountered in an area where VOC contamination is a concern should be field-screened for VOCs. However, the actual samples collected for analysis at the laboratory should not be field-screened.

   f. The procedures which will be used to decontaminate the sampling equipment after each sample is collected should also be described. Decontamination procedures should be carried out in accordance with SW-846.

g. The actual material placed in the container for future analysis should be obtained from any visually contaminated portion of the sample, when present.

6. The sample handling procedures which will be used to store, preserve and transport the collected soil or water samples to the laboratory, including chain-of-custody procedures and preservative techniques. These procedures should be carried out in accordance with the guidance in SW-846, Third Edition, including Final Update 1 and any promulgated updates.

7. The analytical procedures which will be used to prepare the samples for analysis and to analyze them. In general, such procedures should be carried out in accordance with those set forth in SW-846, Third Edition including Final Update 1 and any promulgated updates, as appropriate. The actual portion of the sample to be analyzed should be obtained from visually contaminated material if any is present. The procedures specified must be sufficient to analyze for all the parameters identified in the workplan. The estimated quantitation limits and/or practical quantitation limits to be achieved should also be identified. Again, these limits should meet the requirements set forth in SW-846. It must be noted that it is especially important to achieve low detection limits if the goal of the sampling/analysis effort is to demonstrate that little or no contamination exists in a given area. To demonstrate a parameter is not present in a sample, the PQL achieved must be at least as low as that specified in SW-846, where practical. Low detection limits may not be as necessary when collecting samples in contaminated areas.

8. The procedures which will be used to describe and characterize the soils in and around the subject SWMUs down to the sampling depth but not below the water table, including the following:

a. Unified Soil Classification;

b. Soil profile; and

c. Elevation of water table.

9. Documentation that sampling and analysis of groundwater monitoring wells will be carried out in accordance with the Quality Assurance Project Plan as required in III.G below. The plan shall provide information on the design and installation of all groundwater monitoring wells. The designs shall be in accordance with the latest version of the RCRA Groundwater Monitoring Draft Technical Guidance (EPA 53OR-93-001), where appropriate, and the latest version of the Illinois EPA's BOL design criteria. At a minimum:

a. The groundwater monitoring wells must consist of monitoring wells installed in the uppermost aquifer and, as necessary, in each underlying aquifer (e.g., sand units) which is hydraulically interconnected, where appropriate or necessary to characterize the release;

b. At least one background monitoring well in each appropriate aquifer shall be installed hydraulically upgradient (i.e., in the direction of increasing static head) from the limit of the SWMU, except to the extent that SWMUs in close proximity can be investigated with the same background well system. The number, locations, and depths must be sufficient to yield groundwater samples that are (1) representative of background quality in the uppermost aquifer and units hydraulically interconnected beneath the facility and (2) not affected by SWMUs or other contamination sources at the subject facility; and

c. Monitoring wells in each appropriate aquifer shall be installed hydraulically downgradient (i.e., in the direction of decreasing static head) at the limit of the SWMU or SWMU group. Their number, locations and depths must ensure that they allow for detection of releases of hazardous waste or hazardous constituents from the SWMU(s).

10. The procedures and criteria for evaluating analytical results to establish the presence or absence of any plume of contamination and to define the boundaries of the plume of contamination. The release criteria shall be defined in this portion of the plan.

D. SITE-SPECIFIC SAMPLING PLANS

The Permittee shall prepare detailed site-specific sampling plans to be submitted as part of the work for each phase of the RFI which address all field activities needed to obtain site-specific data. The plans must contain: a statement of sampling objectives, specifications of equipment, analyses of interest, sample types, sample locations and schedules for sampling. The plans must describe in detail how the RFI will be implemented.

Site-Specific sampling and analysis plans should contain the following information for each SWMU or SWMU group being investigated:

1. Goals and Objectives of Effort - A discussion of the goals and objectives of the sampling/analysis effort should be included in the plan for the SWMU. This will have an impact on the overall plan, as the sampling/analysis effort required to demonstrate that an area is clean is very different than that required to determine the horizontal and vertical extent of contamination.

2. Parameters and Analytical Procedures - A list of proposed parameters and analytical methods along with a discussion justifying their selection for the SWMU should be included in the plan. The proposed parameters should include those hazardous constituents which may be present based upon a knowledge of the wastes managed at the unit. This list should include degradation products. Additional parameters for analysis may be required by the Illinois EPA, depending on its review of the wastes and other materials managed at the facility.

3. Sample Locations - A scaled map should be provided in the plan showing the location where the samples are to be collected.

4. Sampling Depth - As appropriate, the plan should identify the depth from which each sample is to be collected.

5. Sample Collection Procedures - The procedures which will be used to collect the samples must be described in the workplan.

6. Any additional items regarding the sampling/analysis at a specific SWMU.

E. INFORMATION REQUIRED SPECIFICALLY IN THE RFI PHASE I WORKPLANS

The following information must be provided as part of the RFI Phase I Workplans.

1. General Facility Information

The following information must be provided (to the extent known) in the Phase I RFI Workplan regarding the facility overall:

a. A description of the facility, including the nature of its business, both past and present. This description should identify (1) the size and location of the facility, (2) the raw materials used and products manufactured at the facility and (3) the Standard Industrial Code which describes the type of activities carried out at the facility;

b. Identification of past and present owners;

c. A discussion of the facility's past and present operations, including solid and hazardous waste generation, storage, treatment and disposal activities;

d. A brief discussion of the SWMUs addressed under the workplan;

e. A description of all significant surface features (ponds, streams, depressions, etc.) and wells within 1,500 feet of the facility;

f. A description of all land usage within 1,500 feet of the facility boundary;

g. Identification of all human populations and environmental systems susceptible to contaminant exposure from releases from the SWMUs within a distance of at least 1,500 feet of the facility;

h. Approximate dates or periods of past spills or releases, identification of material spilled, amount spilled, location, and a description of the response actions, including any inspection reports or technical reports generated as a result of the spill or release.

i. A current topographic map(s) showing a distance of at least 1,500 feet around the facility and other information described below, and at a scale of one inch equal to not more than 200 feet. Contours shall be shown on the map, with the contour interval being sufficient to clearly show the pattern of surface water flow. If such a map is not available, the workplan shall describe the method for generating the map for inclusion in the Group 1 Phase I/II report, as required to support the RFI. The map shall clearly show the following:

(1) Map scale, North arrow, date, and location of facility with respect to Township, Range and Section;

(2) Topography and surface drainage depicting all waterways, wetlands, 100-year floodplain, drainage patterns, and surface water areas as related to the SWMUs and the surrounding areas;

(3) Property lines, with the owners of all adjacent property clearly indicated;

(4) Surrounding land use;

(5) Locations and boundaries of (1) all solid waste, including hazardous waste, management units, both past and present, (2) spill areas and (3) other suspected areas of contamination;

(6) All injection and withdrawal wells, and

(7) All buildings, tanks, piles, utilities, paved areas, easements, rights-of-way, and other features including all known past and present product and waste underground tanks or piping, as available and applicable to potential releases from the SWMUs.

The map(s) shall be of sufficient detail and accuracy to locate and report all current and future RFI work performed at the site. The base map(s) shall be submitted in the Group 1 Phase I/II report and modified in subsequent reports and workplans as appropriate.

2. Unit Characterization

Phase I Workplans must contain the following information, to the extent known, for each SWMU included in the Group being investigated:

a. Location of unit/area;

b. The horizontal and vertical boundaries of each unit/area;

c. Details regarding the construction, operation and structural integrity of each unit/area;

d. A description of all materials managed and/or disposed at each SWMU including, but not limited to, solid waste, hazardous wastes, and hazardous constituents to the extent they are known or suspected over the life of the facility including

(1) Type of waste or hazardous constituents placed in the units, including source, hazardous classification, quantity and chemical composition;

(2) Physical and chemical characteristics, including physical form, physical description, general chemical class, cohesiveness of the waste;

e. The history of the utilization of each SWMU and the surrounding areas, including the period of operation and age of the unit;

f. Methods used to close the unit, if applicable;

g. A description of the existing degree and extent of contamination at each unit area.

h. Identification of additional information which must be gathered regarding 2.a through 2.g above.

3. Soil Sampling and Analysis Plan

The Sampling and Analysis Plan (SAP), dated March, 2006 developed by the Permittee was approved by Illinois EPA on August 8, 2006 (Log No. B-162-CA-9, 32, 33) with conditions and modifications. This plan was developed to be used as a reference document throughout the corrective action process at the facility. The SAP contains standard procedures for sampling and analysis for soil, groundwater and surface water during investigations. All corrective action investigation shall be conducted in accordance with the SAP and the Illinois EPA's August 8, 2006 approval letter (Log No B-162-CA-9, 32, 33) and subsequent approved plans. As indicated in the August 8, 2006 letter, an individual sampling plan shall be developed for each SWMU during the entire corrective action process; however, the foundation for the workplans shall follow the approve procedures of the SAP. Any modifications to the approved SAP must be submitted to Illinois EPA for review and approval.

4. Surface Water and Sediment Sampling and Analysis Plan

Phase I Workplans must provide for a determination of the presence or absence of releases of hazardous wastes and hazardous constituents into all surface waters or their sediments potentially affected by the facility. The SWMUs requiring surface water and sediment investigations are identified in Condition IV.B.1. The plan should meet the requirements of III.C and III.D and must also include, but is not limited to:

a. A description and characterization of all potentially affected surface waters, as it is available, including locations, areas, depths, inflows and outflows, volumes of water, seasonal fluctuations, flooding tendencies, drainage patterns, on-site and off-site affected populations and activities.

b. Descriptions and characterization of sediments associated with all surface waters, as it is available, including deposition areas, thickness profiles, and physical and chemical parameters;

5. Hydrogeologic and Hydrologic Description

The Group 1 Phase I/II Workplan and any other workplans for investigating groundwater must provide descriptions of the hydrogeology and hydrology setting at the facility.

The information which must be provided regarding the hydrogeology and hydrology at the facility includes:

a. Information, as it is available, for the facility overall, regarding:

(1) The regional geologic and hydrogeologic characteristics in the vicinity of the facility, including stratigraphy, hydrogeologic flow and the areas of recharge and discharge.

(2) Any topographic or geomorphic features that might influence the groundwater flow system;

(3) The hydrogeologic properties of all of the hydrogeologic units found at the site down to the first bedrock aquitard, including: hydraulic conductivity and porosity, texture, uniformity and lithology; and interpretation of hydraulic interconnections between saturated zones, and zones of significant fracturing or channeling in the unconsolidated and consolidated deposits;

(4) Using the facility map as a base, isopach and structural contour maps, and at least two (2) geologic cross sections showing the extent (depth, thickness, lateral extent) of all hydrogeologic units within the facility boundary, down to the first bedrock aquitard, identifying: all units in the

unconsolidated and consolidated deposits; zones of higher permeability or lower permeability that might direct or restrict the flow of contaminants; perched aquifers; and the first saturated zone that may have a potential for migration of contaminants;

(5) The water level or fluid pressure monitoring, including: water level contour maps and vertical gradient sections, well or piezometer hydrographs and interpretation of the flow system, interpretation of any changes in hydraulic gradients, and seasonal fluctuation; and

(6) Any man-made influences that may affect the hydrogeology of the site, identifying local water supply and production wells and other man-made hydraulic structures within 1500 feet of the facility boundary.

b. Additional hydrogeologic and hydrologic information may be gathered during the groundwater or SWMU investigations.

c. A detailed discussion of all previous groundwater monitoring efforts. This discussion must include: (1) scaled maps showing the location of all wells used to collect the monitoring data; (2) construction details of the wells used to collect the monitoring data; (3) a summary of the results of all previous groundwater monitoring efforts; and (4) a detailed evaluation of the collected data

6. Potential Receptors

The Group 1 Phase I/II workplan must contain data describing the human populations and environmental systems within a radius of 1,500 feet of the facility boundary that may be affected by releases from SWMUs must be collected and submitted. The following characteristics shall be identified.

a. Local uses and possible future uses of groundwater:

(1) Type of use (e.g., municipal or residential drinking water source, industrial, etc.); and

(2) Location of groundwater users, including wells and discharge areas.

b. Local uses and possible future uses of surface waters draining the facility:

1. Domestic and municipal;

2. Recreational;

3. Agricultural;

4. Industrial; and

5. Environmental.

c. Human use of, or access to, the facility and adjacent lands, including, but not limited to:

1. Recreation;

2. Agriculture; and

3. Residential.

7. Integrity Inspection

The Group 2 RFI Phase I Workplan must provide for an evaluation of the structural integrity of the concrete-asphalt surface of the drum staging areas (SWMUs 1 and 20) and the heat exchanger bundle cleaning pads (SWMUs 10 and 25A-C). These surfaces shall be inspected by an independent registered professional engineer for cracks/joints which penetrate through the concrete/asphalt. The workplan must define the standards and procedures that will be followed when conducting the inspections. The standards and recommendations of professional/technical entities such as the American Concrete Institute, the Portland Cement Association, the American Society of Testing and Materials, the American Society of Civil Engineers, etc., which relate to the ability of concrete/asphalt to contain liquids should be considered. The results of this inspection shall be (1) submitted in the form of a report, (2) included in the Group 2 RFI Phase I report, and (3) certified in accordance with 35 Ill. Adm. Code 702.126 by the engineer. The reports must include (1) the results of the inspection, (2) scaled drawings showing the location of all cracks and construction joints observed during the investigation, (3) conclusions reached regarding any cracks or construction joints observed in the area of concern, (4) justification for the conclusions reached (e.g., information must be provided which indicates that any construction joints in the areas of concern are indeed watertight), and (5) photographs to support the conclusions reached and recommendations for correction action to prevent releases from the SWMU, as appropriate.

If joints, cracks or other defects are found in the base of any SWMU during the inspection required above which would potentially allow hazardous waste or hazardous constituents to migrate through them, then the Phase I Workplan must provide for the collection of soil samples beneath them to determine if hazardous waste or hazardous constituents have been released to the underlying soil.

a. Samples should be collected from at least one location along each joint or crack that provides a potential for hazardous waste or hazardous constituents to migrate to underlying soil. Such locations shall be biased to stained areas or low-lying areas where spills would tend to accumulate.

b. Samples should be collected from 0" - 6" below the subgrade/natural soil interface.

c. Samples must be collected and analyzed in accordance with the procedures set forth in the sampling and Analysis Plan below.

F. INFORMATION REQUIRED SPECIFICALLY IN THE RFI PHASE II WORKPLANS

1. Soil Investigation

A Phase II Soil Sampling and Analysis plan, if necessary, must describe procedures to determine the nature and extent of hazardous waste and/or hazardous constituents released to the soil. This plan shall address and/or include, in addition to the plans specified in III.C and III.D:

a. A description of what is known about the horizontal and vertical extent of contamination;

b. A description of relevant contaminant and environmental chemical properties within the affected source area and plume, including solubility, specification absorption, leachability, exchange capacity biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect contaminant migration and transformation (if known);

c. Specific contaminant concentrations, if known;

d. The horizontal and vertical velocity and direction of contaminant movement (if known);

e. An extrapolation of future contaminant movement (if known); and

f. The methods and criteria to be used to define the boundaries of the plume(s) of contamination.

2. Sediment and Surface Water Sampling and Analysis Plan

A Phase II RFI sampling and analysis plan to characterize the contamination of surface waters and sediments shall include, at a minimum:

a. A description of the horizontal and vertical extent of any plumes and the extent of contamination in the underlying sediments (if known);

b. Specific contaminant concentrations (if known);

c. The horizontal and vertical direction and velocity of contaminant movement (if known);

d. An evaluation of the physical, biological and chemical factors influencing contaminant movement (if known);

e. An extrapolation of future contaminant movement (if known);

f. The criteria used to define the boundaries of the plume; and

g. The sampling conditions required under III.C and III.D.

3. Hydrogeologic and Geologic Investigation Plan The Phase II hydrogeologic and geologic investigation plan must provide descriptions of groundwater monitoring systems which will provide adequate data on the detection, nature, extent and rate, and concentration of any release from the SWMU to the groundwater at the facility.

The information which must be provided regarding the investigation of hydrogeology and hydrology at each SWMU includes:

a. Information for the individual SWMU or SWMU group, or other approved approach as it is available, regarding:

(1) The regional geologic and hydrogeologic characteristics in the vicinity of the facility, including stratigraphy, hydrogeologic flow and the areas of recharge and discharge.

(2) Any topographic or geomorphic features that might influence the groundwater flow system;

(3) The hydrogeologic properties of all of the hydrogeologic units found at the site down to the first bedrock aquitard, including: hydraulic conductivity and porosity, texture, uniformity and lithology; and interpretation of hydraulic interconnections between saturated zones, and zones of significant fracturing or channeling in the unconsolidated and consolidated deposits;

(4) The water level or fluid pressure monitoring, including: water level contour maps and vertical gradient sections, well or piezometer hydrographs and interpretation of the flow system, interpretation of any changes in hydraulic gradients, and seasonal fluctuation; and

(5) Any man-made influences that may affect the hydrogeology of the site, identifying local water supply and production wells and other man-made

hydraulic structures near a SWMU, SWMU Group, or on a Site-Wide basis.

b. Procedures for obtaining information identified in III.F.3.a above which was not obtained during preparation of the workplan, as required to characterize the release at the SWMU.

c. A description of the extent of contamination in groundwater associated with a release from the SWMU, including:

(1) A description of the known horizontal and vertical extent of the contamination;

(2) Specific contaminant concentrations, if known;

(3) The horizontal and vertical velocity and direction of contaminant movement, if known; and

(4) An extrapolation of future contaminant movement.

d. A sampling plan which follows III.C and III.D.

G. DATA COLLECTION QUALITY ASSURANCE

Quality Assurance Project Plan (QAPP), dated March, 2006 developed by the Permittee was approved by Illinois EPA on August 8, 2006 (Log No. B-162-CA-9, 32, 33) with conditions and modifications. This plan was developed to be used as a reference document throughout the corrective action process at the facility. The QAPP contains standard procedures for the quality assurance plan during soil and groundwater sampling and analysis. All quality assurance of soil and groundwater sampling and analysis during corrective action investigation shall be conducted in accordance with the QAPP and the Illinois EPA's August 8, 2006 approval letter (Log No B-162-CA-9, 32, 33) and subsequent approved plans. Any modifications to the approved QAPP must be submitted to Illinois EPA for review and approval.

H. DATA MANAGEMENT PLAN

The Permittee shall develop and initiate a Data Management Plan to document and track investigation data and results. This Plan shall identify and set up data documentation materials and procedures, project file requirements, and project related progress reporting procedures and documents. The Plan shall also provide the format to be used to present the raw data and conclusions of the investigation(s). This plan shall be submitted with the Group 1 Phase I/II Workplan or other workplan as appropriate. The Data Management

Plan can be incorporated by reference in subsequent workplans and changes shall be made as necessary through addendums to the original plan.

I. HEALTH AND SAFETY PLAN

Under the provisions of 29 CFR 1910 (54 FR 9,295, March 6, 1989), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations. These requirements must be met during each phase of the RFI. A detailed Health and Safety Plan (HSP) demonstrating that his requirement is met must be contained in the workplan for each phase of the RFI. The HSP from previous phases can be incorporated by reference into the current workplan provided that any changes or additions to the existing HSP are detailed in an addendum contained within the workplan.

J. IMPLEMENTATION OF RFI

The Permittee shall conduct those investigations necessary to characterize the site, and to determine the nature, rate and extent of migration, and concentrations of hazardous waste and hazardous constituents, if any, released from the SWMUs into the surface water and sediments, groundwater, and soil. The investigations must be of adequate technical content to support the development and evaluation of a corrective measures program, if one is deemed necessary by the Illinois EPA's BOL.

The investigation activities shall follow the plans and procedures set forth in the Workplan(s) and the RFI schedule. Any actual or anticipated deviations from the Workplan(s) or the RFI schedule shall be reported no later than the time of submission of the next quarterly report required by Section V subsequent to the determination of need or actual deviation from the Workplan.

K. SUBMISSION OF REPORTS OF RFI ACTIVITIES

The Permittee must prepare and submit workplans and reports which must be submitted to the Illinois EPA for review and approval in accordance with the schedule set forth in the following table. Any progress report to summarize overall corrective action program at the facility must be submitted by CITGO upon Illinois EPA's request:

Facility Action	Due Date
Completion of Group 1 or 2 RFI Phase I/II investigation and submission of report	Within time frame established in the Phase I/II Workplan, subject to Illinois EPA's approval.
Submission of RFI Phase II Workplans	Within 90 days of notification that Phase II is required.
Completion of RFI Phase II investigation and submission of Phase II Report	Within time frame established in the Phase II workplan subject to Illinois EPA's approval.
Submission of Supplemental Investigation Workplan	Within 90 days of notification that supplemental investigation is required.
Completion of supplemental Investigation and Submission of Report and Summary	To be specified in the supplemental investigation workplan subject to approval by Illinois EPA.
Annual RCRA Sewer Inspection and Maintenance Report	March 31 of each following
Corrective Action Progress Report	Upon Illinois EPA's request and to be specified by Illinois EPA.

CITGO Lemont Refinery

Renewal RCRA Hazardous Waste Permit

USEPA ID No: ILD041550567
STATE ID No: 1978030004
Log No: B-162R

ATTACHMENT C-2

Summary of Illinois EPA Letters Regarding Corrective Action

Attachment C-2

Summary of Illinois EPA Letters Regarding Corrective Action and CITGO's Submittals to Illinois EPA Under Review

(Updated October 2010)

I. Chronological Summary of Illinois EPA Letters Regarding Corrective Action

IEPA Letter Dates & Log No.	Description of Submittal	IEPA Action Taken
9/18/97 B-162	Application for RCRA Post-Closure Permit.	Issued a RCRA permit for closure and post-closure care of four land treatment units. Permit also required facility to conduct corrective action at 34 SWMUs. Permit broke SWMUs down to two groups, with Group 1 being those SWMUs, with a known release or highest potential risk to human health and the environment, which are to be addressed first then the Group II SWMUs. A list of SWMUs is provided in Attachment 1; a drawing showing the locations of the SWMUs and 4 land treatment units is provided in Attachment 2.
10/22/98 B-162-M-11	A request to modify the GMZ beneath and around the stormwater basin (this GMZ is also identified as SWMU 33). The requirements for the GMZ were initially contained in Conditions IV.B.1.a of the RCRA Permit.	Approved request (the GMZ is also identified as SWMU 33).
11/28/00 B-162-M-1	Closure by removal demonstration at the wastewater treatment sludge decant Basin (a surface impoundment) which had previously been closed under IEPA approved plan (Log No. C-193). This is also referred to as SWMU 15C; required by Condition I.C of the RCRA permit.	Disapproved request; required further soil investigation be conducted at this unit.

IEPA Letter Dates & Log No.	Description of Submittal	IEPA Action Taken
5/14/01 B-162-M-1	A workplan for soil investigation at SWMU 15C as part of closure by removal demonstration required by Condition I.C of the permit; follow-up to our 11/28/00 letter (see above).	Approved with conditions and modifications.
10/9/01 B-162-CA-1 B-162-CA-2 B-162-CA-3	Following documents were included in this submittal: a. Group I RFI Phase I/II Wkpln b. Sewer Inspection and Maintenance Work Plan c. Streamlined Corrective Action Workplan	All three documents were disapproved.
11/14/01 B-162-M-1	A soil investigation report for SWMU 15C, submitted as part of the closure by removal demonstration required by Condition I.C of the Permit. Follow-up to our 5/14/01 letter.	Approved report with conditions; required the facility to remove the "ashy/silty" materials from the unit.
9/27/02 B-162-M-1	Final closure by removal demonstration document for SWMU 15C, as required by Condition I.C of the permit. It contained soil investigation results and soil excavation report; follow-up to our 11/14/01 letter.	Approved a closure by removal demonstration for a former surface impoundment as known as SWMU 15C.
2/21/03 B-162-CA-4 (1)	Sewer Inspection and Maintenance Work Plan (B-162-CA-2), submitted in May 1998.	Approved plan as a follow-up to IEPA's 10/9/01 letter.
4/9/03 B-162-CA-4 (2)	The submittal, received on 1/17/02, consisted of: -Workplan for Streamlined RCRA Corrective Action ; -Results of Site-Wide Groundwater Investigation; and -Workplan and Procedures: Streamline Corrective Action	IEPA's response included concerns and requirements that need to be addressed prior to establishing the revised process for carrying out corrective action program at facility.

IEPA Letter Dates & Log No.	Description of Submittal	IEPA Action Taken
1/28/04 B-162-CA-6 B-162-CA-7	Submittals included: • Site-Wide Groundwater Monitoring Report (9/03); • Workplan for Streamlined RCRA Corrective Action (10/03); • Letter dated 1/8/04- request to withdraw the 10/03 streamlined workplan.	Approved the Site-Wide Groundwater Monitoring Report with conditions to conduct additional groundwater investigation at the site. Indicated the streamlined plan was withdrawn and as discussed in 12/03 meeting, a revised Streamline CA Workplan is to be submitted to IEPA by 1/31/04.
6/1/04 B-162-CA-11	A 1/30/04 report entitled SWMU-1 Soil Investigation, Streamline Corrective Action Program and supplemental information, dated 5/6/04.	Approved a report documenting that no further action was necessary to address SWMU 1 (Former Empty Drum Storage Area).
10/4/04 B-162-CA-9 B-169-CA-10	Submittal contained following documents: • Work Plan for Site-Wide Groundwater Monitoring (rec'd on 2/2/04); • Wkpln for Eval of GW Conditions at I&M Canal (rec'd on 3/30/04); • Sewer Inspection—Annual Report (rec'd on 3/30/04); • RCRA Streamlined Category A SWMU Work Plans (rec'd on 3/30/04) for SWMUs 2a-e, 3, 16, 17, 19b, 24, 31a, and 31b-e.	-Accepted the Sewer Inspection annual report. -Approved the Workplan for Category A SWMUs with conditions and modifications and focused mainly on soil investigation only. -Required additional groundwater corrective action activities, a report for evaluation of I&M canal, and additional information regarding groundwater monitoring wells are required in this letter.
1/6/05 B-162-CA-5	A workplan entitled SWMU 43j: Pipeline release Located Near Tanks 92 and 108, which included a soil sampling plan for SWMU 43j (rec'd on 12/14/04).	Approved workplan with conditions and modifications.
3/23/05 B-162-CA-12	A groundwater report entitled, Field Investigation Report: Evaluation of Groundwater Conditions at the I&M Canal, rec'd on 11/23/05. CITGO proposed natural attenuation to address the groundwater contaminations at the site.	Disapproved report; required CITGO to submit a plan to address groundwater in I&M Canal within 60 days (this date was eventually extended by additional 60 days as a result of a 5/19/05 meeting between IEPA and CITGO).

IEPA Letter Dates & Log No.	Description of Submittal	IEPA Action Taken
8/24/05 B-162-CA-13 &15-22	Submittals rec'd on 3/31/05 contained Category A SWMU investigation Reports for the following SWMUs: SWMUs 2a-e, 3, 16, 17, 19b, 24, 31a, 31b-e, and 43j (*workplan for this effort had been approved on 10/4/04).*	Approved the reports. Additional work is necessary at each SWMU.
10/21/05 B-162-CA-23	Site Wide Groundwater Monitoring Report, rec'd on 6/20/05, was submitted to address groundwater concern discussed during a meeting between IEPA and CITGO on 6/19/05.	Approved the report with conditions and modifications. IEPA required CITGO to submit additional information regarding its background and details on the remediation options.
11/30/05 B-162-CA-9	Work Plan for Streamlined Corrective Action, rec'd on 2/3/04 and related draft *revised* worplan, rec'd via e-mail on 3/1/05 & 5/13/05.	Disapproved. CITGO is required to submitted either a revised CA workplan or a Phase I/II RFI Workplan for all Group I SWMUs in accordance with the RCRA Permit by 1/31/05.
1/31/06 B-162-CA-25	Phase II RFI Workplan for SWMUs 2A-E received on 11/28/05.	Approved Citgo's plan to monitor this unit for 12-mo and to submit a report of the monitoring after 12-mo. No further investigation is necessary regarding soil at these units.
2/27/06 B-162-CA-1 & 8	• CITGO's 1/14/04 letter regarding Disposal of Storm Water Basin (SWB) Material, rec'd on 1/16/04. • CITGO's 7/12/05 submittal entitled, Withdrawal of January 14, 2004 Proposal Regarding sSorm Water Basin (SWB) Material at the Land Treatment Facility (LTF) and Notice of Plan for Final Grading of SWB Material at the LTF, rec'd on 7/15/05. • CITGO's 12/8/05 letter to request an extension for submittal of a Phase I/II RFI Workplan for Group I SWMUs, rec'd on 11/18/05.	Approved an extension request and required CITGO to submit a Phase I/II RFI Workplan for Group I SWMUs by March 31, 2006. Also approved withdrawal of CITGO's 1/14/04 letter; however, this letter didn't not address any other content of the 7/12/05 submittal. Rob Watson (RCRA Unit) to respond to final grading plan in 7/15/05 submittal.

IEPA Letter Dates & Log No.	Description of Submittal	IEPA Action Taken
2/27/06 B-162-CA-27 thru 30	Phase II RFI Workplans for following SWMUs: SWMU 17, SWMU 19B, SWMU 31A, and SWMU 43J, rec'd on 11/28/05.	Approved Phase II Workplans for the four SWMUs with conditions and modifications. Acknowledgement that a revised SAP and QAPP will be submitted in the near future. Any future CA activities will be conducted in accordance with the facility's RCRA permit.
4/3/06 B-162-CA-26	Phase II RFI Workplan for SWMU 16 (Former Sludge Application Area).	Approved the Phase II RFI workplan for SWMU 16 with conditions and modifications. It required to address arsenic contamination and to submit a report by September 1, 2006.
5/8/06 B-162-CA-31	2006 Groundwater Monitoring and Investigation Work Plan, dated 1/30/06 (rec'd on 2/1/06). This submittal replaced Groundwater CA Workplan was received on 7/19/05 (B-162-CA-24).	Approved the groundwater investigation work plan with conditions and modifications. Additional information is required to be submitted within 30 days.
6/8/06 B-162-CA-14& 34	2004 RCRA Sewer Investigation Annual Report, dated 3/30/06 (rec'd on 4/1/05), and 2005 RCRA Sewer Investigation Report, dated 3/24/06 (rec'd on 3/27/06).	Approved with conditions and modifications. Additional information, such as maps, information regarding ratings and investigative schedule to be submitted within 75 days
7/17/06 B-162-CA-35 thru 47	Phase I/II RFI Workplans for the following 13 SWMUs, dated 3/30/06: 4, 7, 11A, 11B, 12, 19D, 21, 30, 32, 33, 34, 36, and 37.	Approved with several conditions and modifications. No further corrective action was required for the following SWMUs: SWMU 36 and SWMU 37.
8/8/2006 B-162-CA-9 (CCR), -32 (QAPP), -33 (SAP)	(1) Quality Assurance Project Plan (QAPP), dated 3/22/06; (2) Sampling and Analysis Plan (SAP), dated 3/22/06; and (3) Current Conditions Report (CCR), dated 1/30/04.	Approved with conditions and modifications. Illinois EPA required standard procedures for the sampling and analysis program unless otherwise specifically proposed in an individual workplan for each SWMU.

IEPA Letter Dates & Log No.	Description of Submittal	IEPA Action Taken
10/4/06 B-162-CA-48, 49 &50	(1) Modification to Interim 2006 Site-wide Groundwater monitoring and Investigation workplan – Free Phase Hydrocarbon Procedures, dated 6/1/06; (2) Response to Comment #1, dated 6/1/06; (3) Amended request to Groundwater Work Plan: Groundwater monitoring and Investigation workplan, dated 8/4/06; and (4) Response to Comment #7 – Sampling Schedule, dated 6/1/06.	Approved with conditions and modifications. A few modifications to proposed FPH recovery and monitoring are made by Illinois EPA.
11/27/06 B-162-CA-52	Phase II RFI Report for Former Sludge Application Area (SWMU 16), dated 8/30/06.	No further corrective action was required for SWMU 16.
1/17/07 B-162	Citgo's letter entitled Monitoring Well/Piezometer Abandonment (P-16,PB-MW-4 & FR-MW-5), dated 8/11/06.	Approved abandonment of P-16,PB-MW-4 & FR-MW-5. Additional submittal regarding the three wells are requested.
1/17/07 B-162-CA-51	Response to Comments on 2004 and 2005 RCRA Sewer Investigation Annual Reports, dated 8/18/06.	Additional information to the 2004 & 2005 Annual Sewers Reports are approved with conditions and modifications.
4/12/07 B-162-CA-55&61	Phase I RFI Report for Spill at Hot Oil Line (SWMU 4) and Vertical Oil Storage Tank (SWMU 21), both dated 1/30/07.	An ELUC must be placed for SWM 21 to restrict land use for Ind/Comm. No further action is required for SWMU 4.
5/17/07 B-162-CA-53	"Re-Evaluation of Groundwater Management Zone", received on 10/3/06.	Approved with conditions and modifications.
5/31/07 B-162-CA-54&66	"Stepped Flow Rate Pump" and "Site-wide Groundwater monitoring and Investigation Workplan", received on 11/29/06 and 2/6/07, respectively.	Approved with conditions and modifications.

IEPA Letter Dates & Log No.	Description of Submittal	IEPA Action Taken
6/13/07 B-162-CA-56 thru 60, 62, 63, 64	Phase I RFI Reports for the following SWMUs: 7, 11A, 11B, 12, 19D, 30, 34, 2 a-e (all but SWMU 2 report were submitted on 1/30/07; SWMU report was submitted on 2/28/07).	Phase II workplans and groundwater remedial plan for SWMU 2 must be submitted within 90 days.
12/6/07 B-162-CA-73 thru 84	Phase I RFI Workplans for the following SWMUs: 5, 10, 13, 15A/15B, 18&19A, 19C, 20, 25A, 25B, 25C. 35, and 44.	The twelve-workplans were approved with conditions and modifications.
12/17/07 B-162-CA-67	2006 RCRA Sewer Investigation Annual Report was submitted and was received on march 28, 2007 and October 5, 2007 (CA certification form).	The annual report was approved with conditions and modification.
12/17/07 B-162-CA-69 thru 72	Phase II RFI Report for the following SWMUs: 17, 19B, 31A, and 43J (received on May 16, 2007).	Approved Phase II Report for the 4 SWMUs with conditions and modifications.
B-162-CA-85 1/28/08	(1) Preliminary GRW-2 and GRW-2 Effectiveness Report, dated 07/06/07; and (2) Response to Comment 2C (Ca-54&66), dated 8/1/07.	Approved with conditions. No groundwater investigation is necessary at SWMUs 36 & 37. No replacement wells are necessary at SWMU 32. Replacement wells are approved at SWMU 30, 31A-E.
2/20/08 B-162-CA-65&88	Soil Investigation of Year 2 defects (1/31/07), Re-examination of Sewer Defects/Soil Locations (9/4/07) and Soil Investigation of Year 3 and Remaining Year 2 Defects (10/17/07).	Approved with conditions and modifications.
4/25/08 B-162-CA-86	September 10, 2007 submittal (rec'd 9/13/07) regarding following SWMUs: 7, 11A&B, 12, 19D. 30, 34, and 2a-e.	Approved with conditions and modifications. This submittal included CM Plan for 19D.
4/25/08 B-162-CA-90	Multiple Step Pump Test (8/28/07)(rec'd 8/30/07) was submitted to further evaluate the pilot testing of hydraulic controls at GQ-MW-2A.	Approved with conditions and modifications. The facility is required to submit a report upon the completion of the pilot testing.

IEPA Letter Dates & Log No.	Description of Submittal	IEPA Action Taken
8/1/08 B-162-CA-91	Citgo's March 14, 2008 submittal (rec'd on 3/18/08) addressed CA activities at the following SWMs: 17, 19B, 31A, an 43J. This submittal was sent in response to IEPA's 12/17/07 letter (CA-69-72).	Approved with conditions and modifications. Workplan for SWMU 19B and an extension of submitting a workplan for SWMU 43J are approved.
12/18/08 B-162-CA-114	A corrective measure completion report for SWMU 19D Former sludge Drying Area, received on 10/31/08.	Approved NFA with condition that migration to groundwater exposure route is addressed through GMZ and that ELUC will have to be eventually placed for industrial land use in the area.
1/13/09 B-162-CA-92	2007 Annual Sewer Investigation Report	Approved with conditions and modifications.
3/12/09 B-162-CA-93 thru 97	Phase II RFI Workplan for SWMUs 38a, 38b, 38c, 39a, and 39b (RCRA sewer investigation – soil investigation)	Approved with conditions and modifications.
B-162-CA-100 and 119 No letter Issued (5/28/09 memo to BOL File)	-An extension request for the 4 required submittals included in the IEPA's 4/25/08 letter (Log No. B-162-CA-86). -Summary of Conference Call from 11/19/2008.	-Extension request was approved prior to the submittal of letter - Summary was informational purpose only.
6/5/09 B-162-CA-101	Corrective Measures Plan (CMP) for SWMU43J	Approved with conditions and modifications
6/16/09 B-162-CA-116,117, 118	addressed: (1) Group 2 Phase I Report for: SWMU 25A, (2) Phase II & Closure Report for SWMU 34, and (3)CM Plan for SWMU 12	Approved with conditions and modifications
9/16/09 B-162-CA-115	Proposed gauging and re-sampling Sumps 2c and 2e utilizing low-flow sampling technique.	Approved with conditions and modifications
12/21/09 B-162-CA-121	2008 RCRA Annual Sewer Investigation Report, which addressed West Tank Farm (Areas 3 and 5) and North Plant (Areas 4b and 2).	Approved with conditions and modifications.

IEPA Letter Dates & Log No.	Description of Submittal	IEPA Action Taken
2/1/10 B-162-CA-135	CITGO's 12/16/09 letter, proposing to abandon five flush mounted piezometers (PZ-4, PZ-5, PZ-7, PZ-8 and PZ-9)	Approved with conditions and modifications.
2/24/10 B-162-CA-129	SWMU 43J CM Completion report.	Approved with conditions and modifications.
3/15/10 B-162-CA-127	SWMU 38A Investigation report.	Approved with conditions and modifications.
4/26/10 B-162-CA-102	Current Conditions Report and Proposed workplan for Future Groundwater Management, Lemont Refinery, Illinois	Approved with conditions and modifications.
7/8/10 B-162-CA-139	Phase II RFI and Closure report for SWMU 38a- Process Sewer Line Segment at 31-MH8-DP01 to 31-MH8-DP-02	Approved with conditions and modifications. Tier 2 evaluation for construction worker Inhalation ROs were approved.
7/14/2010* B-162-CA-133 **IEPA Memo to BOL File*	Proposal for additional sampling at SWMU 7 to delineate lead contamination found in the area.	*This proposal for additional investigation was approved prior to the submittal of the letter.*
7/29/10 B-162-CA-142	Notification of a newly discovered SWMU (SWMU 45-Contaminated Fill Area)	Approved the proposal to submit a RFI worklplan by 8/31, 2010 for this new SWMU.
10/4/10 B-162-CA-126, 128	- Revised CMP for SWMU 12 - Investigation report for SWMUs 38b, and 38c.	NFR was issued for SWMU 38b with ELUC for I/C use. NFA on soil was required for SWMUs 12 and 38c, however, groundwater must be investigated for SWMUs 12 and 38c.

II. Summary of CITGO's Submittals to Illinois EPA Under Review

Log No. & Rec'd Date	Description of Submittal
B-162-CA-98 5/23/08	Draft ELUC for SWMU 31A. May 2008 submittal supersedes March 2008 submittal.
B-162-CA-99 5/28/2008	Draft ELUC for SWMUs 31 B-E. May 2008 submittal supersedes Oct 2007 submittal (B-162-CA-87)
B-162-CA-103 thru109 and 110 thru 113 10/2/08	Group 2 Phase I RFI Reports for the following SWMUs: 5,10, 13, 15A/B, 18&19A, 19C, 20 25B, 25C, 35 and 44
B-162-CA-120 3/16/09	Soils Investigation Report for 2007 Sewer Defects
B-162-CA-122 4/17/09	RFI Phase I reports for SWMUs 43A thru I.
B-162-CA-123 4/17/09	RFI Phase II report for SWMU 11A
B-162-CA-124 4/17/09	RFI Phase II report for SWMU 11B
B-162-CA-125 8/4/09	CMP for SWMU 30
B-162-CA-130 11/13/09	CM completion report for SWMU 19b
B-162-CA-131 11/30/09	CM completion report for SWMU 39a
B-162-CA-132 11/30/09	CM completion report for SWMU 39b
B-162-CA-134 11/23/09	Supplemental SWMU 2a-e investigation report.
B-162-CA-136 1/6/10	Soils Investigation Report for 2008 Sewer Defects

Log No. & Rec'd Date	Description of Submittal
B-162-CA-137 3/31/10	2009 RCRA Sewer Investigation Annual Report
B-162-CA-138 4/8/10	Revised Tier 2 proposal for SWMU 34 in response to IEPA's April 25, 2008 letter (Log No. B-162-CA-86).
B-162-CA-140 6/1/10	Defect Release Determination Soil Screening Assessment Work Plan for SWMUs 38, 39, and 40.
B-162-CA-141 6/7/10	Phase I RFI and Closure Report for SWMU 38D (Process Sewer Line segment: 52-LF51-DP-01 TO 52-MH34-DP-01)
B-162-CA-144 8/31/10	SWMU Assessment Report for SWMU 45.
B-162-CA-145 9/27/10	Site-Wide Groundwater Management Program Proposed Workplan
B-162-CA-146 10/25/10	Phase II RFI and Supplemental Investigation Report for SWMU 7

CITGO Lemont Refinery

Renewal RCRA Hazardous Waste Permit

USEPA ID No: ILD041550567
STATE ID No: 1978030004
Log No: B-162R

ATTACHMENT D

Corrective Measures Program Requirements

Attachment D
Corrective Measures Program Requirements

1.0 Introduction

In accordance with Section 3004 of RCRA and 35 IAC 724.201, CITGO must institute such corrective action necessary to protect human health and the environment from all releases of hazardous wastes, or hazardous constituents listed in the modified Skinner List of constituents provided in the approved Permit Renewal Application from any Solid Waste Management Unit (SWMU) at its facility. This is accomplished by:

1. Conducting a RCRA Facility Investigation (RFI) to determine whether releases of hazardous wastes and hazardous constituents have occurred from any Solid Waste Management Unit (SWMU) at the subject facility, and, if so, the nature and extent of the release; and

2. Based on the results of the RFI, developing and implementing a Corrective Measures Program which describes the necessary corrective actions which will be taken. The required corrective actions shall be those actions necessary to protect human health and the environment from all releases of hazardous wastes, or hazardous constituents, listed in Appendix H of 35 Ill. Adm. Code Part 721, from any SWMUs above site-specific cleanup objectives.

The purpose of this document is to describe the steps in developing and implementing the Corrective Measures Program (CMP). To allow for a logical and orderly progression in developing and implementing necessary corrective action at SWMUs, the Corrective Measures Program should be carried out in five phases.

1. Phase I should consist of (1) development of final cleanup objectives, (2) discussion of those SWMUs requiring corrective measures and (3) a preliminary evaluation of the corrective action alternatives available for each SWMU requiring corrective action.

2. Phase II should consist of development of a conceptual design of the corrective action chosen for each SWMU including remedial system(s) and/or institutional controls.

3. Phase III should consist of development and submission of the final design plans for the corrective action, including operation/maintenance plans and plans for the actual installation of the desired correction action.

4. Phase IV is the actual construction/installation of the selected corrective measure.

5. Phase V CMP is operation, maintenance, and monitoring of the selected corrective action to ensure it is properly protecting human health and the environment.

Workplans, reports, etc. will have to be developed as part of the efforts associated with each phase. All such documents will be subject to Illinois EPA review and approval. Details associated with each phase and the development of workplans, reports, etc. required for each phase is provided below.

2.0 Phase I of the CMP

In the initial phase of the Corrective Measures Program, the Permittee should (1) develop cleanup objectives for the SWMUs being investigated, and then (2) identify those SWMUs requiring corrective action. If it should be determined that a specific SWMU, or group of SWMUs, require corrective action, then the Permittee should identify, in general, types of remedial technologies or institutional controls which may be instituted to address and/or stabilize residual contamination, and identify the goals of the corrective measures. All of these efforts should be documented in the form of a Phase I Corrective Measures Report which includes the following:

1. Proposed Final Soil Clean-up Objectives. Final soil cleanup objectives will determine the need for and extent of soil remediation (soil corrective measures) at each SWMU investigated.

    a. The procedures utilized to develop the final soil cleanup objectives must take into consideration, as appropriate:

        i. The volume and physical and chemical characteristics of the contaminants of concern;

        ii. The effectiveness and reliability of containment, confinement and collection systems and structures in preventing contaminant migration;

        iii. The hydrologic characteristics of the unit and the surrounding area, including the topography of the land around the unit;

        iv. The patterns of precipitation in the region;

        v. The existing quality of surface soils, including other sources and their cumulative impacts on surface soils;

        vi. The potential for contaminant migration and impact to the underlying groundwater;

        vii. The land use patterns around the facility;

        viii. The potential for health risks caused by human exposure to the waste constituents; and

ix. The potential for damage to domestic animals, wildlife, food chains, crops, vegetation, and physical structures caused by exposure to waste constituents.

b. The Permittee and the Illinois EPA should have a meeting prior to the time that the Permittee begins developing these objectives. The goal of this meeting will be to provide the Permittee with guidance regarding the procedure which should be followed in developing and proposing these final cleanup levels.

c. The Illinois EPA will establish final cleanup levels if none are proposed by the Permittee.

d. All remedial objectives must be developed in accordance with 35 Ill. Adm. Code 742 (TACO). Any other methods used to develop remedial objectives for this project must be approved by the Illinois EPA.

e. Final Illinois EPA action taken on the development of and establishment of these final soil cleanup levels will be subject to the appeal provisions of Section 39(a) of the Illinois Environmental Protection Act.

f. For certain SWMUs, it may not be appropriate to establish final soil cleanup levels. This will be the case for those SWMUs where the selected corrective action is capping of the area followed by long-term monitoring of groundwater.

2. Final Groundwater Corrective Measures Objectives. Final corrective measures or cleanup groundwater objectives will determine the need for and extent of groundwater remediation (groundwater corrective measures). The procedures used in the development of these objectives must be in general accordance with the procedures described above for final soil cleanup objectives and must also meet the requirements set forth in 35 IAC 620.

a. The Permittee and the Illinois EPA should have a meeting prior to the time that the Permittee begins developing these objectives. The goal of this meeting will be to provide the Permittee with guidance regarding the procedure which should be followed in developing and proposing these final groundwater cleanup objectives;

b. The Illinois EPA will establish final cleanup levels if none are proposed by the Permittee.

c. Final Illinois EPA action taken on the development of an establishment of these final objectives will be subject to the appeal provisions of Section 39(a) of the Illinois Environmental Protection Act.

3. Evaluation of Need for Corrective Action The need for corrective action at each SWMU should be evaluated, based upon a comparison of the proposed clean-up objectives to the results of the RFI.

4. Potential Corrective Measures The report should contain a general discussion of the possible corrective measures which may be taken at SWMUs where it is determined that some type of corrective measure is necessary. More detailed information of such measures should be provided if the selected corrective measure has an impact on the development of the clean-up objectives. Also, there must be a discussion of whether the various measures will actually remove the contamination from the environmental media of concern or whether it is some type of institutional control to minimize the potential for future releases from the SWMU. Typically, some type of long-term monitoring is required for corrective measures which employ institutional control.

5. Schedule for the Corrective Measures Program The schedule for each Phase of the CMP and the submittals shall be included.

6. Ecological Assessment An ecological assessment may be required as part of the Phase I CMP if ecological receptors are identified that would be impacted by the release from the SWMU and if the proposed corrective measures do not address the exposure pathway. The objective of the analysis would be to determine if there will be any adverse impact on the ecology resulting from the proposed cleanup objectives. Ecological assessments may also be required if institutional controls (such as capping, etc.) are the selected corrective measures if the site has ecological receptors. This assessment should be developed in accordance with USEPA guidance. A review of the ecological receptors and the exposure pathways should be included in Phase I of the CMP for each SWMU or SWMU group.

3.0 Phase II of the CMP

Phase II of the CMP includes selection of the corrective measure to be taken and developing a basis for completing the final design of the measure. This effort should be documented in a Conceptual Design Report which describes the proposed corrective measure for each SWMU and provides a conceptual design for these measures. The main criteria for Illinois EPA review is whether the proposed corrective measures are able to achieve the final cleanup objectives established by the Permittee and the Illinois EPA in Phase I of the CMP and/or provide the institutional controls to prevent the migration of contaminants from the SWMU of concern necessary. Based upon a review of the Conceptual Design Report, the Illinois EPA may approve the corrective measures, require revisions to the proposed corrective measures, or require that a totally new corrective measures proposal be submitted to the Illinois EPA.

The Conceptual Design Report should contain the following sections:

1. Introduction/Purpose. The report should include an introductory section which contains: (1) general background information regarding the project; (2) the purpose and goals of the submittal; and (3) the scope of the project.

2. Existing Site Conditions. The report should contain a summary of the RFI activities conducted for each of the SWMUs of concern and the results of Phase I of the CMP for each SWMU. RFI investigation analytical results should be provided in tabular form, and maps depicting both the horizontal and vertical extent of contamination at the site should be provided.

3. Evaluation for Potential Future Migration. Based on the existing site conditions, a conceptual model of the site should be developed and presented in this report. The potential for additional future migration of contamination for each of the SWMUs of concern must then be evaluated, especially those SWMUs which have been determined to have released hazardous waste/hazardous constituents to the groundwater. It may be helpful to develop conceptual models for contaminant migration. Of special concern in this evaluation are (1) the physical properties of the contaminants (solubility, volatility, mobility, etc.) and (2) existing site conditions (types of soil present, location of contamination, hydrology, geology, etc.).

4. Corrective Measures Objectives. The report should discuss the general objectives of the proposed corrective measures to be constructed/installed for each SWMU at the subject facility, and the ability of the proposed corrective measures to achieve the established Corrective Measures cleanup objectives.

5. Identification of Options Available. The report should contain a discussion of the various options available to achieve the corrective measures objectives for each SWMU. This discussion should identify: (1) a general overview of each option available, including how the option will achieve the stated objective; (2) the advantages associated with each option; (3) the disadvantages associated with each option and (4) an estimate of the cost associated with choosing each option as the corrective measure.

6. Description of Selected Corrective Measure. The report should contain a qualitative discussion of the corrective measure chosen, along with the rationale which was used to select this measure from all those identified initially. This discussion should include documentation that the selected correction measure will be effective.

7. Identification of Design Criteria. The report should identify what information must be available to design the selected corrective measure.

8. Review of Available Information. The report should contain an evaluation of the existing information to ensure that sufficient information is available to complete the design of the selected corrective measure. If insufficient information is available, then the report should contain procedures for collecting the required information. The level of detail required for this additional data collection should be similar to that provided in RFI workplans.

9. Procedures for Completing the Design. The report should contain a description of the procedures which will be followed to complete the design of the corrective measure. This should include as appropriate:

a. Identification of the references and established guidance which will be used in designing the selected corrective measure. Justification for the selection of this procedure should also be provided.

b. A description of the procedures which will be used to complete the design of the corrective measure.

c. Identification of assumptions to be used in the design, and the impact these assumptions have on the overall corrective measure;

d. Significant data to be used in the design effort;

e. Identification and discussion of the major equations to be used in the design effort (including a reference to the source of the equations);

f. Sample calculations to be used in the design effort;

g. Conceptual process/schematic diagrams;

h. A site plan showing a preliminary layout of the selected corrective measure;

i. Tables giving preliminary mass balances;

j. Site safety and security provisions.

The information presented herein will form the continuing technical basis for the detailed design of the system and the preparation of construction plans and specifications.

10. Identification of Required Permits. The report should identify and describe any necessary permits associated with the selected corrective measure, as well as the procedures which will be used to obtain these permits.

11. Long-lead Procurement Considerations. The report should identify any elements/components of the selected corrective measure which will require a large amount of time to obtain/install. The following issues should also be discussed: (1) the reason why it will take a large amount of time to obtain/install the item; (2) the length of time necessary for procurement and (3) recognized sources of such items.

12. Project Management. The report should contain information regarding the tasks and personnel which will be involved in completing the design of the selected corrective measure. A schedule for completing the design should also be provided.

4.0 Phase III of the CMP

Once the Illinois EPA approves the Conceptual Design Report, the facility should complete the design of the approved corrective measure (Phase II of the CMP). Upon final completion of the design, the Final Design Report, consisting of final plans, specifications, construction workplan, etc. must be submitted to the Illinois EPA for review and approval. Typically, the Illinois EPA requires that these documents be submitted to the Illinois EPA within 120 days after the Conceptual Design Report has been approved. The final design report of the CMP must be submitted to the Illinois EPA in the form of a Class II permit modification in accordance with 35 Ill. Adm. Code Part 703. Should implementation of the corrective measures include construction/installation of additional structures which would meet the definition of RCRA regulated units, the Illinois EPA may notify the Permittee that the submittal will be reviewed as a Class III permit modification in accordance with 35 Ill. Adm. Code Part 703. In any event, as the submittal is either a Class II or Class III modification to the facility permit, the Illinois EPA response will be handled in accordance with the procedures for Class II and Class III modifications as outlined in 35 Ill. Adm. Code Parts 703 and 705. Several documents must be submitted to the Illinois EPA as part of Phase III of the CMP. The following text describes the expected contents of the various documents which should be developed and submitted to the Illinois EPA as part of Phase III of the CMP.

1. Final Design Report and Construction Workplan. The Final Design Report and Construction Workplan must contain the detailed plans, specifications and drawings needed to construct the corrective measure. In addition, this document must contain (1) calculations, data etc. in support of the final design; and (2) a detailed description of the overall management strategy, construction quality assurance procedures and schedule for constructing the corrective measure. It must be noted that the approved Conceptual Design Report forms the basis for this final report. The information which should be provided in this document includes:

    a. Introduction/Purpose. This portion of the document should (1) provide background information regarding the project, (2) describe the purpose and goals of the project, and (3) describe the scope of the project.

    b. Detailed Plans of the Design System, including the following:

        1. Plan views;

        2. Section and supplementary views which, together with the specifications and general layouts, facilitate construction of the designed system;

        3. Dimensions and relative elevations of structures;

        4. Location and outline form of the equipment;

        5. Ground elevations; and

6. Descriptive notations, as necessary, for clarity.

c. Technical Specifications. Complete technical specifications for the construction of the system. The specifications accompanying construction drawings should include, but are not limited to, the following:

1. All construction information, not shown in the drawings, which is necessary to inform the contractor in detail as to the required quality of materials, workmanship, and fabrication of the corrective measure;

2. The type, size, strength, operating characteristics and rating of the equipment;

3. The complete requirements for all mechanical and electrical equipment, including machinery, valves, piping and jointing of pipe;

4. Electrical apparatus, wiring and meters;

5. Construction materials;

6. Chemicals, when used;

7. Miscellaneous appurtenances;

8. Instruction for testing materials and equipment as necessary; and

9. Availability of site background information (such as soil boring, etc.).

d. Project Management. A description of the construction management approach, including the levels of authority and responsibility, lines of communication and qualifications of key personnel who will direct corrective measures construction/installation must be provided in the workplan.

e. Construction Quality Assurance/Quality Control. The workplan must contain a construction quality assurance/quality control plan describing the procedures which will be followed to ensure the corrective measure is constructed/installed in accordance with the approved plans and specifications.

f. Schedule. The workplan must contain a schedule for completion of all major activities associated with construction/installation of the selected corrective measures. All major points of the construction/installation should be highlighted, with a graphical representation of the project schedule included.

g. Waste Management Practices. This portion of the document should identify the wastes anticipated to be generated during the construction/installation of the corrective measures, and provide a description of the procedures for appropriate characterization and management of these wastes.

h. Required Permits. This portion of the report should contain copies of permit applications submitted to other Bureaus of the Illinois EPA for the selected corrective measure. If it is determined that no permit is required for construction/installation and implementation of the corrective measures, rationale and justification must be provided to support this contention.

2. Operation and Maintenance Plan. An Operation and Maintenance Plan must be developed and submitted as part of Phase III of the CMP. This plan should outline the procedures for performing operations, long term maintenance, and monitoring of the corrective measure.

a. Introduction and Purpose. This portion of the document should provide a brief description of the facility operations, scope of the corrective measures project, and summary of the project objectives.

b. System Description. This portion of the document should provide a description of the corrective measure and significant equipment, including manufacturer's specifications. This portion of the plan should also include a narrative of how the selected system equipment is capable of complying with the final engineered design of the corrective measure.

c. Operation and Maintenance Procedures. This portion of the document should provide a description of the normal operation and maintenance procedures for the corrective measures system, including:

a. Description of tasks for operation;
b. Description of tasks for maintenance;
c. Description of prescribed treatment or operation conditions; and
d. Schedule showing the frequency of each operation and maintenance task.

d. Inspection Schedule. This portion of the document should provide a description of the procedures for inspection of the corrective measures system, including problems to look for during the inspection procedure, specific inspection items, and frequency of the inspections.

e. Waste Management Practices. This portion of the document should provide a description of the wastes generated by operation of the corrective measures, and the appropriate procedures for proper characterization and management of these wastes.

f. Contingency Procedures. This portion of the document should provide a description of the procedures which will address the following items:

1. System breakdowns and operational problems including a list of redundant and emergency backup equipment and procedures;

2. Alternative procedures (i.e., stabilization) which are to be implemented in the event that the corrective measure suffers complete failure. The alternative procedures must be able to prevent release or threatened releases of hazardous wastes/hazardous constituents which may endanger human health and the environment, or exceed cleanup standards.

3. Notification of facility and regulatory personnel in the event of a breakdown in the corrective measures, including written notification identifying what occurred, what response action is being taken and any potential impacts on human health and the environment.

5.0 Phase IV of the CMP

Once the reports required by Phase III above are approved by the Illinois EPA, construction/installation of the approved corrective measure must commence. During this period, quarterly reports should be submitted which contain the following information:

1. Summary of activities completed during the reporting period;

2. An estimate of the percentage of the work completed;

3. Summaries of all actual or proposed changes to the approved plans and specifications or their implementation;

4. Summaries of all actual or potential problems encountered during the reporting period;

5. Proposal for correcting any problems; and

6. Projected work for the next reporting period.

Upon completion of construction/installation of the approved corrective measure, a Construction Report must be submitted to the Illinois EPA documenting that these efforts were carried out in accordance with the Illinois EPA approved plans and specifications. This report should contain a thorough description of the efforts that went into constructing/installing the corrective measure and demonstrate that the procedures in the Illinois EPA-approved Final Design Report were followed during this effort. Such a report should be formatted in a logical and orderly manner and contain the following information:

1. An introduction discussing the background of the project and the purpose and scope of the corrective measure described in the report.

2. Identification of the plans, technical specifications and drawings which were used in constructing/installing the corrective measure. These specifications and drawings should have been approved by the Illinois EPA during Phase III.

3. Identification of any variations from the Illinois EPA approved plans, technical specifications and drawings used in construction/installing the corrective measure. Justification regarding the need to vary from the approved plans and specifications must also be provided.

4. A description of the procedures used to construct/install the corrective measure, including the procedures used for quality assurance and quality control.

5. As-built drawings, including identification of any variations from the approved plans, technical specifications and drawings.

6. A summary of all test results from the construction/installation effort, including quality assurance/quality control testing.

7. Actual test results, including quality assurance/quality control test results. These results should be located in an attachment/appendix and be well organized.

8. Identification of any test results which did not meet the specified value and a description of the action taken in response to this failure, including re-testing efforts.

9. Photographs documenting the various phases of construction.

10. A detailed discussion of how the construction/installation effort met the requirements of the approved Final Design Report.

11. A certification by an independent qualified, registered professional engineer and by an authorized representative of the owner/operator (the authorized representative must meet the requirements of 35 IAC 702.126). The wording for this certification must also meet the requirements of 35 IAC 702.126.

6.0 Phase V of the CMP

Once the corrective measure has been constructed/installed, it must be operated, maintained and monitored in accordance with the approved operations and maintenance plans. During this period, quarterly reports must be submitted to the Illinois EPA documenting the results of these efforts. These reports should contain the following information:

1. Introduction. This portion of the document should provide a brief description of the facility operations, scope of the corrective measures project, and summary of the project objectives.

2. System Description. This portion of the document should provide a description of the corrective measures constructed/installed at the site, and identify significant equipment.

3. Monitoring Results. This portion of the document should provide a description of the monitoring and inspection procedures to be performed on the corrective measures. The document should include a summary of the monitoring results for the corrective measures, including copies of any laboratory analyses which document system effectiveness, and should provide a description of the monitoring procedures and inspections performed. Copies of all laboratory analytical results which document system monitoring must be provided.

4. Effectiveness Determination. This portion of the document should provide calculations and other relevant documentation that demonstrates the effectiveness of the selected corrective measure in remediating/stabilizing contamination to the extent anticipated by the corrective measures final design. Copies of relevant analytical data should be provided to substantiate this determination.

5. System Effectiveness Recommendation. Based upon the results of the effectiveness determination required under 4. above, this portion of the report should provide a recommendation on continuance of the corrective measure. If the corrective measure is not performing in accordance with the final design, a recommendation on revisions or expansion of the system should be provided. Additionally, based upon the monitoring results, a schedule for achieving the cleanup objectives should be included with each evaluation.

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